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Psychological Review

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THE PSYCHOLOGICAL REVIEW

KURT LEWIN

1890–1947

Psychology has suffered a tragic loss in the death of Kurt Lewin and for those of us who counted him as friend the sense of bereavement does not lessen. Lewin's contributions to the problems of individual and group psychology were so great and his personality so vivid that any attempt such as this to do justice to him and his work within brief compass can provide but the merest suggestions as to where his true greatness lay.

Kurt Lewin grew up on a farm in Germany. He received his Ph.D. at the University of Berlin in 1914 and served for four years in the first World War rising from private to officer. He returned to the University after the war as instructor in philosophy. In 1926 he became professor of philosophy and psychology.

After several years of working on the more conventional problems of perception and learning within a fairly classical associationistic framework he turned, more or less under the impetus of Gestalt principles, to problems of motivation, and in 1926 he published the first of that series of some 20 brilliant articles by himself and his students which appeared in *Psychologische Forschung* under the superordinate title—*'Untersuchungen zur Handlungs-und Affekt Psychologie,'*—'Investigations into the Psychology of Behavior and Emotion.' Here most of the basic concepts later so famous first appeared: those of the life space, of tension systems, of fluid vs. rigid boundaries, of valences and force-fields, of barriers, of space of free movement, of power fields, of cognitive structure, of reality and irreality levels, of psychical satiation and of the level of aspiration. And here also the distinction between 'systematic' (*i.e.*, dynamic or field) laws and 'historical' laws was first presented.

Perhaps the traits most obviously characteristic of Lewin were intellectual keenness and originality, courage and zest. They were apparent in his daily contacts as well as in the unfailing enthusiasm and energy with which he met every challenge to new scientific activity. These traits could be exhausting and overwhelming to those of us of more pedestrian temper. But they flashed as beacons to guide us.

More important still perhaps was his essential humanity. It was this humanity (itself an outgrowth perhaps of his basic identification with the Jews and their age-long problems) which caused almost all of his scientific career to be concerned primarily with the problems of motivation—the motivation of individuals and the motivation of groups. And it was this humanity which led him to stress throughout the 'situational,' as contrasted with the 'historical' determiners of motivation. He had, I suspect, a tremendous faith in the potentialities of every human being. He felt that, if we could but

correctly conceptualize the a-historical, situational factors determinative of behavior, then we could manipulate these contemporaneous situational factors and produce the sort of behavior which all persons of good will would desire. If we can but discover the 'systematic laws,' the laws of the 'pure case,' *i.e.*, those laws whereby a given 'life-space' inevitably produces a given behavior, then we can know how to change persons and groups to remake their behavior according to our heart's desires. In short, it was his humanity, I believe, which would not allow him to dwell for long on any considerations other than those of the manipulable present. His emphasis on the a-historical was a humanitarian as much as an intellectual need.

Although he did not talk much about it, save to his intimates, all of us sensed his never-tiring efforts and his tremendous giving of himself and of his energies to relatives, friends and other subjects of Nazi persecution. One could but be amazed at the energy and fortitude with which he did all he could to try to circumvent these personal and group tragedies while continuing with unrelenting vigor his scientific investigations which would, he felt, help in the end to mitigate such social horrors.

Lewin did not, of course, actually deny the historical, developmental influences acting upon the individual, and indeed by his diagrams of the structure of the inner life space with its interconnecting tension-compartments and its surrounding and interacting *Motorik*, he actually offered a brilliant conceptual scheme for representing the end results of such historical, developmental determinations. But he himself seems never to have wanted to dwell for long upon such developmental considerations. He did not deny the value of accounts of personality differences by means of depth psychology, but he considered these accounts not yet ripe for intensive investigation. We must first develop good systematic constructs before we devote too much energy to an effort to establish the more superficial historical laws.

Thus he wrote in connection with an analysis of the differences between the American and the German personalities:

> "In other words, there should be a 'systematic explanation,' besides the 'historical' one, namely, an explanation of how these different parts and properties can exist within one concrete social whole. As in psychology, in sociology both the historical and the systematic question 'why' is important, and neither question is finally to be solved without the other. Yet they are considerably different from the logical point of view, and the *systematic explanation has often to be considered first.*" (Italics mine.) [1]

It was in this same essay that he suggested that in Americans (at least in the Americans whom he knew) there is a greater communicability and publicness of most of the outer layers of the personality, and in the Germans a greater impermeability of the surface layers which, however, if once penetrated, break all the way through. This means both greater ease and friendliness in ordinary social relations, and greater contact with immediate practical problems in the American, and a more private and idea-centered life in the German. I cite this distinction because Lewin himself was, or became, so very American in the terms of such an analysis. He was so astoundingly open to communication with others, so free from rank or status considerations. He set up no barriers of formality to protect any save his innermost layers. In one respect, however, he remained in some degree definitely Grman, namely,

[1] K. Lewin, Some social-psychological differences between the United States and Germany. *Character & Pers.*, 1936, 4, p. 278f.

in his concern with ideas, with theory. Yet this attitude of his toward theory became itself, I believe, but a happy compromise between the German and the American. He stuck to his theoretical guns, but he had a sense of humor and he had flexibility. In the most basic sense he was pragmatic. Indeed, I remember one occasion in which a group of us had been making suggestions for a research project in social psychology, and Lewin, as was his way, had rushed to the board where he drew theoretical and topological diagrams for stating the issue in his terms, when suddenly he relaxed and with characteristic whimsicality remarked: "Theory is great, but we mustn't let it get in our way." The ultimate purpose of all theory, I can imagine him thinking to himself, is to be fruitful. One makes it as rigorous as one can. One develops topological and dynamic concepts for stating the basic systematic laws and one does this according to the best mathematical and logical traditions. But one does not press the resultant theoretical system too far—one leaves it in relatively schematic form. One develops the topological and dynamic constructs of the inner and outer life spaces and one predicts the resultant behavior from these, but one is aware that the constructs are mere constructs; and if, with the advance in empirical knowledge, the vector-topological derivations which result from such constructs no longer appear experimentally correct, one is ready to modify and improve upon them as may be necessary. Furthermore, one does not attempt at this stage of our science to give too precise quantifications. It is more important now to evolve a widely applicable, though quantitatively less precise system, than it is to evolve a quantitatively precise but very narrow system. If one must make the choice, one's theoretical assumptions should be of a sort to be widely suggestive and useful rather than of a sort to be highly precise but applicable only to a set of highly selected and artificially controlled facts.

The violent criticisms sometimes made of Lewin's theorizing cannot be ignored. These criticisms seem to have been of two main sorts. First there was the assertion that his dynamics and topology were mathematically or logically incorrect, and second there was the assertion that, while perhaps correct, nothing new could be derived from them. The first of these criticisms I do not feel competent to answer. But, in any event, perhaps it is not the one of major importance since it is certain that Lewin himself could, and would, have introduced the necessary modifications and corrections. (And now we can hope his students will do so.) The second criticism seems to me the more crucial. Is it true as I have heard asserted—or as I myself have at times been tempted to believe—that the proper conceptualization of a given life-space is possible only after the behaviors which are supposed to result from it have already been observed? I believe that in the actual practice of Lewin and his students this indeed often seems to have been the case. They seem often to have observed a given behavior first and then afterwards merely to have intuited an appropriate life-space to explain it. But this criticism is, I think, but partially correct. It arises, I believe, mostly because certain of the steps in the thinking of Lewin and his students were often not explicitly stated. The conceptual system of topology and vectors obviously implies and requires in the end not only a set of principles whereby such and such individual and group life-space configurations will produce such and such behaviors but also a set of principles whereby the independent variables of environmental situation and

given personality make-up will produce such and such inner and outer life-spaces. And it is this latter set of principles which Lewin and his students, while not denying, seem to have been least explicit about stating. For the present they seemed to have reasoned (consciously or unconsciously) that common sense will serve in lieu of formalized principles. One must first make sure that one's concepts of the psychological field are correct and useable before one wastes time on premature and at present inadequately formalizable statements of the complex and often very equivocal and impure laws whereby the 'alien' factors of environment and of personality lead to inner and outer life-spaces.

But far more important than any final precise evaluation of the details of Lewin's theoretical system was its extraordinary fruitfulness. It led to a list of some seventy experimental studies by him and his immediate students, not to mention also the host of studies by individuals working in other laboratories on such crucial concepts as: substitute goals, psychical satiation, level of aspiration, ego level, experimental forgetting, and the like.

Finally, no account of Lewin would be adequate which failed to emphasize the activities of his recent years in what he called 'Group Dynamics' and 'Action Research.' The notion that actual experiments on groups could be carried out under precisely controlled conditions could have come only from a man of Lewin's originality and courage. He and his students deserve immeasurable, never-ending credit for the opening up of this vista for a whole new realm of psychological investigation. None but the dull or the prejudiced could fail to be thrilled by their initial findings on the effects of authoritarian, democratic and laissez-faire types of leadership upon small clubs of boys. And the new techniques and concepts which they developed and to which Lewin gave the name Group Dynamics (when then applied to the problems of workers in factories, of war morale and eating habits, of hospital techniques and, finally, to community tensions arising out of majority-minority conflicts) are, to me, a one bright hope in an otherwise desperate social picture. And, finally, the concept of 'action research'—the carrying out of such group studies with the additional feature that key individuals in the actual social conflicts being investigated should themselves be drawn in as cooperating recorders, observers and analyzers—could have sprung only from both a truly courageous mind and a basically democratic spirit.

In the future history of our psychological era there are two names which, I believe, will stand out above all others: those of Freud and of Lewin. Freud will be revered for his first unravelling of the complexities of the individual history, and Lewin for his first envisioning of the dynamic laws according to which individuals behave as they do to their contemporaneous environments. Freud, the clinician, and Lewin, the experimentalist, these are the two men who will always be remembered because of the fact that their contrasting but complementary insights first made of psychology a science which was applicable both to real individuals and to real society.

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A MOTIVATIONAL THEORY OF EMOTION TO REPLACE 'EMOTION AS DISORGANIZED RESPONSE'

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A discussion of current theoretical interpretations of emotion might have two values. Thus, first, it might have some value as a means of studying the theoretical efforts of present-day psychology. Second, it might have value because of the increasing interest of psychologists in many particular fields in which emotional processes play important rôles.

Confronted with the problem of the limitations of psychology, psychologists rather oddly have been inclined basically to accept the criticism of outsiders —to wit, that the trouble with psychology is too much theorizing and too little factual evidence. This criticism, however, has not reflected any well-informed study. Actually, psychology now shows a one-sided development of an opposite sort. It has achieved a considerable maturity in its factual material and fact-gathering techniques. But it has failed seriously to make corresponding progress in its task of organizing the descriptive data into general principles or theories.

The problem of the nature of emotion, however, is worth discussing, not merely as a means of studying psychological theorizing, but also as a problem worthy of study in its own right. Psychologists are showing increasing interest in the extension of their work into such fields as psychotherapy, personality, child psychology, and social psychology. In all of such cases, if psychologists are to make a full contribution, they must develop some sound concepts of emotional processes, because emotion clearly plays an important rôle in personality disturbances, social prejudices, etc.

The Disorganization Concept as Dominating Current Psychological Theories of Emotion

Even though psychologists have taken an increasing interest in such fields as were just mentioned, the discussions of emotion by psychologists of experimental background have had little application to such other fields. A chief reason for this is that such experimental-psychological interpretations of emotion have been dominated by the concept of emotion as disorganized (or disorganizing) response. This is so poor a generalization of the known facts that it has served as a serious obstacle both to good research work on emotional processes and also to efforts to apply practically the psychological concepts of emotion.

Admittedly, not all of the textbooks of psychology have presented the same theoretical interpretations of emotion. It may seem unfair to psychology as a whole, therefore, to select a limited number of authors as representative of the trend of interpretation in psychology. I think, however, the evidence will indicate that the doctrine of emotion as disorganized or disorganizing response is the favored doctrine in some of the most widely used books.

Let us start with the most recent general text—not merely because it is the most recent, but also because it apparently is also the most widely used introductory text. N. L. Munn's *Psychology* (5), in its chapter on 'Emotion,' says this:

"Perhaps as satisfactory a definition as can be given at the present time describes

emotion as 'an acute disturbance of the individual as a whole, psychological in origin, involving behavior, conscious experience, and visceral functioning' [P. T. Young, *Emotion in Man and Animal*, p. 60]. However, this definition needs some elaboration. We say acute because emotion comes over us suddenly and, after a time, weakens and disappears. . . . We say disturbance because all but the mildest emotions disturb or upset whatever activities are in progress at the time of arousal. We say of the individual as a whole because when an individual is emotionally disturbed, he is disturbed all over" (5, p. 263).

Another significant example is the introductory text by L. F. Shaffer, B. Gilmer and M. Schoen (9). This book has received wide use, and it is noteworthy also because its chapters on emotion reflect the views of L. F. Shaffer, whose *Psychology of Adjustment* (8) has been the most extensively used text in courses on personality and mental hygiene. In the glossary of their book these authors give the definition: "Emotion—A disorganized response, largely visceral, resulting from the lack of an effective adjustment" (9, p. 505). Similarly, and yet also somewhat contradictorily, in the concluding remarks of their 'Chapter VI. Emotional Behavior,' these authors say:

> "As has been stressed throughout this chapter, emotion is a disorganized response that hinders an individual from making effective adjustments" (9, p. 169).

In their chapter on motivation, these authors do not adhere to this approach, but offer a number of the same concepts which the present article will advocate. For example: ". . . emotional responses are basic to many important forms of motivation. . . . Persistence, ambition, rivalry, and cooperation are motivated to a large extent by emotion. . . . Positive motives are closely allied to the emotional responses of delight and affection" (9, pp. 176–177). But in their abstract discussion of emotion, the authors laid no basis for such interpretations, putting all their stress, instead, on the doctrine of emotion as equivalent to disorganized and/or disorganizing response.

The same doctrine appears in the two books by Paul T. Young which represent the two major attempts of psychologists, to date, to organize the scientific materials on motivation and emotion. Thus, in his *Motivation of Behavior* (12) in 1936, at the conclusion of his discussion of the definition of emotions, Young gave this statement with italics:

> *"The foregoing discussion leads us to define emotion as a disruption or disorganization of behavior.* The purest emotions—such as laughing, weeping, extreme general excitement—are those in which there is the most complete loss of cerebral control and the least trace of conscious purpose. During emotional behavior the subject goes wild, his consciousness is a blur, his activity becomes disrupted. . . . The one feature common to all emotional processes is their disorganizing effect upon behavior" (12, pp. 457–458).

In his book on *Emotion in Man and Animal* in 1943, Young gave the definition quoted above as repeated by Munn. In this later book, too, Young repeats the suggestion of his earlier book that another characteristic of emotion is the "weakening or loss of cerebral control" as contrasted with the fact that "During calm, non-emotional behavior the organism usually functions as a unit, the cerebral hemispheres dominating activity of the lower neural centers" (11, p. 50).

Among general-psychology textbooks, another example is to be found in the *Introduction to Psychology* edited by E. G. Boring, H. S. Langfeld, and H. P. Weld (1). This case is significant both because this book made a special effort

to present a scholarly report of general psychology and because the chapter in it on 'Emotional and Affective Responses' was written by Carney Landis, who has occupied an outstanding place among experimental workers on emotion. Landis starts his chapter with the statement that, "Emotional behavior, including the affective experiences of pleasantness and unpleasantness, forms the basis of human motivation" (1, p. 183). However, instead of pursuing this lead by defining motives in relation to this asserted motivational influence, Landis proceeds to consider, in his section on 'Nature of Emotion,' merely such possible criteria as visceral change, affective value, and involvement of the whole organism. He concludes that none of these criteria is a dependable one, and yet he concludes this section with the statement:

"Thus it seems that emotion can best be characterized as a *relationship existing between many diverse elements of experience and reaction.* This relationship is not well specified, but, generally speaking, it is marked by pleasantness or unpleasantness and by disorganization of usually integrated behavior patterns. An emotion is the total of the experience of an individual during any period of time when marked bodily changes of feeling, surprise or upset occur" (1, p. 184; italics in the original).

This is not too clear a statement, of course. It is hard to see how an emotion can be ". . . the total of the experience of an individual during . . ." and yet can also ". . . best be characterized as a *relationship existing between many diverse elements of experience and reaction.*" In general, however, as these statements indicate, Landis's discussion contains to a considerable extent the same suggestion that disorganization is characteristic of emotion.

F. Dockeray's *Psychology* (2), as will be indicated in some quotations later, is unmistakable in its insistence on disorganization as the characteristic feature of emotion. An even more noteworthy example, however, is R. S. Woodworth's *Psychology* (10). Even if Munn currently is the best-seller in psychology, Woodworth has certainly held the long-time record. Woodworth's text, moreover, has been respected especially because of its sensible and reasonable treatment of so many problems. But, on this matter, we find Woodworth using basically the same concept as the authors quote above. Thus he says:

"The difference between emotional and unemotional activity . . . depends on the degree to which the individual keeps his head, that is, on the degree to which the brainy life of relation dominates his whole activity" (10, p. 437).

"The degree of emotionality depends on how free the lower centers are at any time from domination by the cerebral cortex. Or, if we do not pin our faith to any particular theory of the brain action, we can say that activity is unemotional in proportion as it consists in observing and managing the situation" (10, p. 438).

"Emotion is . . . a stirred-up state of feeling—that is the way it appears to the individual himself. It is a disturbed muscular and glandular activity—that is the way it appears to an external observer . . ." (10, p. 417).

Clearly there are some differences between Woodworth's portrayal and that, say, by P. T. Young. But there is still the same basic idea of a contrast between adjustive or adaptive behavior and emotional behavior. As, to quote Woodworth again:

"If the brainy life of relation dominates the organism at the moment, the emotional response is minimized. But if the situation gets out of hand, the emotion appropriate to the situation surges up" (10, p. 418).

From the above survey, I think we can reasonably say that the concept of emotion as disorganized response (or

disorganizing response) is held fairly commonly among psychologists. This impression, furthermore, might have been supported still further by mentioning some other features of the books and chapters cited above. For one thing, an author's definitions are given, not merely by abstract statements, but also by the particular examples to which he points. In this respect we find that almost all of the discussion of emotions is in terms of such emotions as fear, anger, excitement, and their variants such as startle, anxiety, and rage. In other words, most of the attention is given to those emotional processes that seem to fit, at least half-plausibly, the idea of emotions as disorganized or disorganizing reactions. Some passing mention is usually made of other emotions such as delight, joy, affection, and love; but the space devoted to these is negligible in comparison.

For another thing, in speaking about the relation of learning to emotion, almost all of these chapters talk in terms of the problem of the 'control' of emotion. Woodworth, for instance, says this:

> "The practical life of relation dominates more and more over the emotional life, so that the child's behavior becomes less emotional as he grows older. A scale for emotional age, after the analogy of the Binet scale for mental age, would consist in large part of tests for *not* being afraid or angry or grieved or inquisitive over things which regularly arouse these emotions in the younger child" (10, p. 432).

Emotion, in other words, is something to outgrow! Even Floyd Ruch's *Psychology and Life* (6), for all practical purposes, expresses the same approach. For, despite the fact that Ruch says that, "The best way to control emotional behavior is, clearly, to acquire useful emotional responses and to lose hampering ones" (6, p. 169), his chapter on 'Control of Emotions' goes into detail on the problem of how to eliminate such emotions as fear, but contains nothing in the way of suggestions on how to "acquire useful emotional responses."

It would not be correct to say that the above-mentioned authors have dealt exclusively with evidence of emotions as disruptive. Broadly speaking, however, it is only in minor touches that emotions are considered, in these books, in any other sense. The general tenor of the interpretation is the idea that emotions may best be understood as disorganized or disorganizing responses.

CULTURAL ORIGINS OF THE DISORGANIZATION THEORY OF EMOTION

One might wonder whether psychologists have originated this theory from their experimental evidence, or whether they are merely reflecting a concept which has developed from other origins. Rather oddly, several spiritual kin of this disorganization concept are easily found. They are family relations which many psychologists might wish to disavow. But they are there, nonetheless.

We commonly think of the period of Locke and Adam Smith and the French encyclopedists as the age of rationalism. It was the period in which man was held to be primarily and fundamentally a rational creature. Or, at least, it was believed that he *should* be a rational and intelligent creature. Only in the rational or intellectual functions did mankind reach its proper stature. The passions and like weaknesses of human life were unfortunately too often visible, but they were something to be overcome. They were something that made for traditionalism in religious thinking, for respect and deference to authorities, for inertia rather than scientific-mindedness.

We generally pride ourselves that we have come to realize the inadequacies of this rationalistic approach to human na-

ture. We are probably justified in this pride to some extent, because in psychology we have come to realize the rather humble nature of human learning processes in many types of situations. But we should not claim too much difference in our theories, because the view that emotions are basically disruptive, and that a child properly should become "less emotional as he grows older," could almost have been the doctrines of the old rationalists themselves!

Furthermore, when psychologists consider emotion as disruptive, they have another relationship that is even more surprising, especially in view of the resemblance of psychological thought to the doctrine of rationalism just mentioned. For, if any psychoanalytic thinker were asked whether his ideas are comparable to the rationalistic tradition, he would insist proudly that psychoanalytic thought has been the one really effective challenge to that earlier conception of human nature. He would say that psychoanalytic ideas are the opposite of rationalism.

Perhaps they are. But the psychoanalytic theory states that the ego—the ordinary conscious and pre-conscious part of the personality, the main workaday part of the personality—is a reality-recognizing and reality-manipulating part of the personality. The instinctive processes of the personality, with their emotional components, are not a part of the ego functions, but are a part, instead, primarily of the id, and perhaps to some extent of the super-ego. Not only that, but these instinctive tendencies, with their emotional aspects or components, are the trouble-makers in the whole personality of the individual. They are not things that are to be enriched and developed, if possible. They are nothing that gives reassurance and stability to the personality, but, at least in one sense, they are the disruptive factors in the life of the person!

A fine expression of this is given in Hanns Sachs' *Freud: Master and Friend* (7) when Sachs speaks of Freud as a courageous thinker. He says:

> "To look at the Medusa's head is no parlor game. Freud—and this is the sum of everything that has been said in this chapter—was steady enough to stand firm when he perceived that we are not and never will become the masters of our own soul, even when he made the staggering discovery of what unholy stuff the unknown masters are made. He did not flinch when he had to look down, standing at the brink of the precipice. Most others who followed in his tracks got at first a fit of giddiness and had to hold on to him to steady themselves when the mountains seemed to reel. What could those do who were too proud to be supported by him and yet too weak to stand alone? They covered their eyes with their hands and slunk away" (7, p. 123).

Now, really, what is Sachs saying by this? What were the facts which were so fearsome to contemplate? In a sense, of course, they were ideas antithetical to the rationalist tradition. They were ideas of intellect as dominated by emotional forces, and they were ideas that these emotional forces were threatening forces of sexual passion, hostility, terror, and the like. But, in this, do we have entirely an abandonment of, or contrast with, the rationalist position? Or do we, on the contrary, have here merely the rationalist disconsolately convinced against himself, still convinced that human life *would* be best if intellectual processes could be the undisputed masters of human life, but forced to admit that this fond hope is unfounded? There is, after all, no confidence here in emotional reactions, no idea of emotional processes as necessary for a full or wholesome human life.

There is still another intellectual relative of the disorganization theory of emotion. This third relative has resulted from the whole trend of modern

technology. It is the sort of thing which Gustav Ichheiser (4) has emphasized when he has pointed out that some of the views which we are apt to regard as rather original insights of psychology are merely elaborations of ways of viewing life demanded by the social setting of modern psychology.

What I refer to is that our modern world most obviously is a world of skills, factual knowledge, and intellectual processes—or, in short, of nonemotional processes. At least this is the case at the end where goods are produced, as contrasted with the consumers' end of the process. Advertisers of course know that they have to appeal to emotional motives rather typically. But we take the view that, if anything, the folly of people's behavior as consumers (*cf.* the kinds of movies they demand, the kind of radio programs to which they listen, and the kind of newspapers they buy) merely indicates the superiority of the brains involved in production as compared with the inferiority of the emotions involved in consumers' behavior.

Nor is it merely in industry that the broader social scene tends to echo the suggestion that emotion is disruptive. In political life we speak of propaganda (in an unfavorable sense) as appealing to the emotions. We speak of rabble-rousers as depending on appeals to emotion. We know that some very unfortunate political movements, from Ku Klux Klan to fascism and naziism, more or less frankly have built their programs on an emotional basis. In the field of religion we have seen that traditionalism and fundamentalism, often openly allied with emotionalism, have conflicted with other more intellectual tendencies which have sought to revise religious beliefs in the light of historical criticism, scientific knowledge, etc.

Consequently, when we question the doctrine that emotions are disorganizing, it is no straw man that we are considering. It is a view, instead, that has been rooted in our popular thought for several centuries. It appears in psychoanalytic thinking as well as in academic psychology. It is enormously strengthened by the fact that a highly technological society tends to share the view that intellectual processes are *the* worthwhile and appropriate human functions.

It does not condemn a concept in psychology, however, merely to point out that it resembles some concept in psychoanalysis or some concept naturally used in everyday life. We need to turn, therefore, to the question as to whether there really is justification for thinking of emotions as disruptive.

THE DISORGANIZATION DOCTRINE AS RESTING ON UNDEFINED AND WRONGLY INTERPRETED TERMS

When we consider the pitfalls which beset the path of the scientist who is trying to develop an adequate theory, we are likely to find that there are two main pitfalls: (1) the risk that he will survey too narrow a range of facts when he is trying to formulate or evaluate some abstract proposition, and (2) the risk that he will use vague, undefined terms or poorly defined terms, so that it will be hard for him to see whether he always uses his terms consistently and hard for him to see whether the available factual knowledge supports or contradicts the abstract statement he is considering. It is from these angles, now, that we need to examine the rather common view of emotion cited above. Let us consider first the matter of carefulness of definition and of consistent use of terms.

First of all, we may note that none of the above-mentioned authors has attempted to give a definition of such terms as 'disorganized' and 'disorganizing.' They are the key terms, or crucial

terms, for such a theory. But the authors apparently have assumed that the terms are self-explanatory or self-defining, with their meanings sufficiently indicated by common usage or by the dictionary. But to proceed in this way is dangerous. It is the typical way in which sloppiness and inaccuracy sometimes slip into scientific theory. Where there are no explicit definitions of key terms, it is easy for thinkers to neglect significant factual data and it is easy to fall into inconsistent usages.

As an example of such inconsistent or shifting meanings, we find that these psychologists seem to speak as though the two terms 'disorganized' and 'disorganizing' (or 'disturbance' and 'disturb') are synonymous. Thus, in the quotation from Munn given above, you will remember that, at first, he says that emotion may be defined as "an acute disturbance." Then, to explain this, he says, "We say disturbance because all but the mildest emotions disturb or upset whatever activities are in progress . . ." (5, p. 263). Now either usage might be clearcut. We might say that the *disturbance* or *disorganization* of behavior is the emotion. Or we might say that the emotion is *what produces this disturbance.* Or, conceivably, we might say that emotion is both the disturbance and that which produces the disturbance of the previous processes. But there can be no claim to scientific thinking when, without explaining our gymnastics, we jump back and forth from one such contradictory usage to another. It is not Munn alone, either, who follows such a shifting usage. It is the typical thing with all of the authors quoted above.

The difficulty is not solely a matter of lack of definitions, however, but is a matter also of sticking consistently to the same definitions, because even when the implied meanings are fairly clearcut, there still exist contradictions in closely-adjacent sentences. Careful thinking takes a lot of time, a lot of turning-over-and-over of the material. The disorganization theory of emotion has not received such careful thought. Let us consider Munn again. He says that ". . . all but the mildest emotions disturb or upset whatever activities. . . ." From this a student might reasonably assume that there are some (mild) emotions that do not "disturb or upset." But, when the student then tries to find out the definition of these emotions, he has to go back to the statement that emotions are "an acute disturbance." This is not acceptable, of course. A definition of a key term in psychology must cover the phenomenon as it appears in all degrees.

Several other examples of such contradictory usages may be found in F. Dockeray's *Psychology* (2). He says:

"WHEN THE BEHAVIOR OF THE ORGANISM BECOMES DISORGANIZED AS THE RESULT OF THE OCCURRENCE OF A SITUATION FOR WHICH IT HAS NO READY RESPONSE, WE MAY CALL THE DISORGANIZATION 'EMOTION.' This is the distinguishing feature of emotional behavior: It can and does occur to all degrees, from the mild disturbances we call *feelings* to the gross upsets that are called *emotions*" (2, p. 159; capitals in the original).

In this statement there is a contradiction in two successive sentences. The first sentence says that *any* disorganization we call 'emotion.' The next sentence, however, says that only *gross* upsets are called 'emotions'—and this even though disorganization in any degree is the "distinguishing feature of emotional behavior"! Still further, on the following page, Dockeray makes this statement when discussing the emotional development of children:

"As the years pass, the child . . . also is acquiring new interests, love of parents,

their welfare as well as his own, friends with whom he is willing to share in order to secure more remote goals, and the satisfaction of seeing others happy. From a crude vegetative animal, he is developing into a human being with sympathies, appreciations, adorations, and a host of other *emotionally toned* patterns" (2, p. 160; italics added).

Now, by any reasonable use of words, an emotionally toned pattern of response is activity which involves at least some mild emotion. But, we were just assured that disorganization is the distinguishing feature of emotions in 'all degrees.' But surely Dockeray does not mean to assert that there is such a disorganization in the examples just quoted. He is simply failing to integrate what he says at one point with what he says at another point.

CONTRADICTIONS BETWEEN THE FACTUAL DATA AND CAREFUL DEFINITIONS OF 'DISORGANIZED' AND 'DISORGANIZING'

The center of the whole discussion, then, obviously lies in the matter of what is meant by such key terms as 'disorganize' and 'disorganization' (or their opposites, 'organize' and 'organization').

First of all, it should be clear that these terms possess no connotation, properly, of 'good' or 'bad.' In fact, they have been used primarily because it was felt that they were terms which avoided any such value-judgments. This is a reasonable view. After all, an organized mob or an organized gang is not necessarily something good. So, 'organized' must not be taken as meaning 'useful' or 'wholesome in its influence.' Instead, a system is 'organized' when one part of it is functioning harmoniously with other parts. Something is 'organized' when the parts fit, or dovetail, or are congruous with one another. And on the other hand, something is 'disorganized' when the subordinate parts operate at cross purposes with each other. Something has an 'organizing' influence in a system when it tends to produce order or cooperation or harmony between different subordinate parts or subordinate activities.

A qualification needs to be added, however. 'Organization' always is purchased at the price of interfering with what is inconsistent with the main basis of organization. For example, when we say that effective study or effective thinking is an 'organized' process, we need to recognize that the person's activity tends to inhibit or side-track some processes which otherwise would occur, or which were occurring previously. The person does not react to sounds which ordinarily would have diverted him; he fails to respond to a condition of hunger which is developing within him; he is side-tracking a number of competing interests. In the same way, even though we would say that a nation at war is more highly organized than a nation at peace, it also is true that factories often are required to give up their regular work, young men are taken from their schools and home life, many recreational activities are discontinued, and so on. The criterion of organization, consequently, is not a matter of whether there is some interference with preceding activities or with inconsistent subordinate activities. ***It is the question whether this interference is relatively chaotic and haphazard, or whether the suppressions and changes of subordinate activities are harmonious with some main function which is being served.*** Unless we adopt such a usage, the disorganization theorists must say that problem-solving thinking is an emotion, because clearly it disrupts preceding modes of response and also interferes with incongruous activities at the moment.

Is there any fault with the definitions

just suggested? If there is, these various authors have not said so. As we have mentioned, they have simply let their main terms be undefined. It would seem, however, as though they would agree with the above suggestions. Let us see, therefore, whether the factual data are consistent with definitions which seem reasonable.

Rather commonly, the authors mentioned above have said that emotions involve disorganization of three aspects of life: visceral processes, behavior, and conscious experience. Let us examine, first, the asserted disorganization of visceral processes. The asserted facts are that, when a person reacts with strong fear or anger (and in some other emotions, but not all), his digestion is slowed or stopped, his heart beats more rapidly, his breathing becomes more rapid, his blood is driven more extensively into the skeletal muscles rather than into the digestive organs, etc.

Is this to be understood as 'disorganization'? Do these subordinate visceral changes operate at cross purposes with one another, or do they dovetail in high degree? There is interference with digestion, of course. But, from the standpoint of the main function for which the organism is now prepared, is this interference with digestion a mark of disorganization, or is it more truly a mark of organization? In such matters, the disorganization theorists have not attempted to show that the different visceral reactions in fear and anger operate at cross purposes with one another! They have been content to refer to faster breathing, faster heartbeat, etc., as though such changes *ipso facto* are demonstrations of disorganization. But, carefully speaking, the person is organized during fear or anger. He is organized viscerally so that he can most naturally do something consistent with his fear or anger. What he is organized to do may be 'unwise' or 'bad.' But that is irrelevant. Viscerally, the 'individual as a whole' is not disorganized.

Behaviorally, is the person disorganized while afraid or angry? If he is, a football coach typically does some very unwise things, because he puts out considerable effort to get his men emotionally aroused (or even angry!). Of course, in some instances it is easy to demonstrate that such emotions as fear often handicap the behavior which the person (because of some other motive) wants to engage in. The pianist with stage-fright, for instance, cannot play well. But the test of whether fear has an organizing effect on behavior is not the test of whether it tends to help produce some kind of behavior demanded by some other competing or conflicting motives of the person! The fear is tending to make the person avoid the platform appearance. It makes him seek for excuses to get out of such performances; it tends to make him flee even after he gets onto the platform. The stage-fright, in other words, tends to organize behavior along lines consistent with that fear.

In the third place, *from the standpoint of conscious experience,* is there disorganization? Again our general factual knowledge denies any such assertion. When a person is strongly aroused emotionally, as in the psychiatric cases so well described in Landis' chapter, the conscious experience is not disorganized. On the contrary, a persistent, insistent mood prevails. The person finds it impossible to shake off a feeling of personal worthlessness or of discouragement or of danger or whatever. There may be some play of thought, it is true, within the limits of what is consistent with the emotionally-significant situation. But the conscious experience shows strong organization. In fact, a main difficulty with such clinical cases is that of helping the person to get any thoughts or feelings other than

he usually has as a consequence of his most prevalent emotional response.

Several answers might be made to these comments, however. In the first place, the disorganization theorists might say, "Yes, that may all be true, but there is a disorganization of the behavior and conscious experience that went before." True enough. But every psychological process has this same effect. When the players in a symphony orchestra see the conductor come out on the platform, this perception causes a cessation of their preceding activity of talking, tuning their instruments, fingering special phrases, and so on. We could say that there is a disorganization of the behavior that was occurring before. But we do not say, because of this, that the musicians have now become emotional. All that we say is that there has been a change of activity and, if anything, a shift from a less organized condition to a more organized condition. When a challenging problem occurs to a scientist he tends to drop what he was working on previously. But we do not say that he is thus becoming emotional. In the same way, then, there is no basis for saying (unless we want to give up all effort at consistency of speech) that emotions are disorganizations because preceding activities are terminated and replaced by other activities.

In the second place, though, the disorganization theorists might say, "Yes, but this shift involves a change from constructive or useful activities to foolish and inappropriate activities." Maybe so. And, correspondingly, if we want to define emotions as 'foolish and inappropriate responses,' this definition might harmonize with the facts to which we would thus be pointing. But, as we said above, the terms 'organize' and 'disorganize' are supposedly neutral with regard to value-judgments. They have appealed to psychologists, rather typically, because they seemed merely descriptive. Well and good, then, we must stick to our meanings. A shift from a wise behavioral organization to an unwise behavioral organization is not a shift from organization to disorganization.

In the third place, however, the disorganization theorists might say, "Now we will play our trump card. Look at what happens when the person becomes *extremely* afraid or *extremely* angry. Then he wants to run, or he wants to call for help, and he cannot do it. He wants to win the football game, but his reaction is so over-intense that he is hampered rather than helped. The boxer becomes so angry that he loses his technical skill and fights ineffectively. What can you say about this—isn't this really disorganization, even in the sense that you defined above?"

In this type of case, indeed, the emotional process does seem to produce disorganization in significant degree. It interferes with reactions that would be consistent or harmonious with what is demanded by the emotion. But are such cases to be the means of deciding the function of emotional responses of all degrees of intensity? If so, there is a queer logic involved. In no other case do we decide on the properties of something by a like procedure. If we did, we would say, for instance, that the function of breathing is to disrupt psychological processes because the person who forces himself to breathe rapidly and deeply will find in a few minutes that he gets dizzy, he begins to tingle all over, and (as is used in electroencephalographic work) if he has a tendency to epilepsy, he will have a mild attack which can be recorded on the electroencephalograph. We do not determine the functions in the body of normal amounts of salt, iodine, fluorine, or any other material by discovering the influence of these same materials

when consumed in extreme doses. We are interested, perhaps, in describing such effects also; but we do not use this as the means of determining the normal functions of such products. The same logic, then, should apply to emotional processes.

Let us now consider another slant on this matter. In the above discussion, in considering whether there is really evidence of disorganization in emotional activity, we have been talking only in terms of such emotions as fear and anger. But, although they have spoken somewhat hesitantly, the disorganization theorists have not applied their concept of emotion merely to such emotions. They have included, although to a relatively limited extent, what might be called positive emotions. For example, Dockeray says:

> "The satisfaction felt in a job well done, the pride of a father in his son, and the joy of meeting an old friend are relatively mild emotions as compared with the unpleasant experiences of dissatisfaction, disgust, or hate" (2, p. 193).

Similarly, in his list of typical feelings and emotions, Woodworth includes joy, amusement, hope, courage, contentment, and love (10, p. 410). Shaffer, Gilmer, and Schoen, in their chapter on 'Emotional Behavior,' include one section on 'delight, joy, and laughter' and another section on 'affection and love' (9, pp. 152–155).

If these are emotions, as the historical usage of the term would suggest, it would seem that they ought to occupy a rather significant place in these discussions. For one thing, unless we are to take an extremely pessimistic view of human life, we might well say that such 'pleasurable emotions' or 'positive emotions' are, in general, just as numerous and important in human life as are the 'unpleasurable' or 'negative' emotions. It is hard to see, therefore, why they secure merely passing mention and why such emotions as fear and anger are discussed as though they are the only valid prototypes of emotion.

However, even beyond this, if these positive emotions are to be spoken of as emotions, we have a right to ask the disorganization theorists to consider the question whether they also are interpreted as supporting the generalization that emotions disorganize the person viscerally, behaviorally, and in conscious experience. A scientific writer should be sensitive to empirical knowledge. As Clark Hull has put the matter very clearly, ". . . wherever a generalization really conflicts with observation the generalization must always give way" (3, p. 12). But what we have in this matter is no such sensitiveness to accepted factual knowledge. Instead, we have the trick of Procrustes: The facts must lie down on a harsh bed of foreordained proportions, and if the facts do not fit, it is just too bad for the facts.

It is curious, in fact, to see the contortions through which some of these authors go in order to make it appear that these emotional reactions do not rule out the definition of emotion as disorganized or disorganizing. Thus, let me quote (with comments) from Shaffer, Gilmer, and Schoen:

> "Superficially, forms of behavior such as joy, elation, and laughter seem very different from the emotions of fear and anger, yet they also bear some striking resemblances. The greatest difference, of course, is that anger and fear have an unpleasant feeling tone, whereas joy and laughter are pleasant. The former are generally avoided, but people will deliberately seek the latter. Delight and similar functions have much in common with emotion, however." [That is, they are *not* emotions, but "have much in common with emotion."] "The joyful individual is stirred up and excited. He shows some disorganization of ordinary habits. Visceral reactions, consisting of changes in heart beat, blood pressure, and

respiration, are also present in joy. It is fair to conclude, therefore, that states of this sort should be called emotional" (9, p. 152).

Thus, behold! Before our very eyes the miracle is accomplished. Having warmed to their task, the authors have convinced themselves, at least, that joy and similar processes do not merely "have much in common with emotion," but that, come to think of it, they *are* emotions! The same miracle of transformation takes place as these same authors take up the discussion of affection and love. They start by saying:

"It is doubtful whether affection and love are emotional states in the psychological sense, but they have the support of long-standing literary usage as 'emotions.' Most conditions of affection lack the violent nature of the other emotional habits . . . described thus far, and are calming rather than exciting physiologically" (9, pp. 153–154).

But then, going on, the authors say:

"The phenomenon of love between the sexes, seen in adolescents and adults, shows more evidence of being a genuine emotional state. The classic lover is distracted and cannot concentrate, his heart beats rapidly upon seeing his loved one, his bosom heaves, and his blood pressure rises. In short, he shows the signs of a first-class case of emotion" (9, p. 154).

Can we expect that students will take such interpretations seriously? They are given the statement that emotions are disorganized and/or disorganizing; they are later told that there are pleasurable emotions such as delight and joy and romantic love as well as unpleasurable emotions; and then they are told that, if truth be known, all these pleasurable emotions are probably disruptive in the same sense, though perhaps not in the same degree, as are the unpleasurable emotions. If this be true, the student might say, it means that the person with a life rich in friendships, in aesthetic emotion, in love for someone of the opposite sex, and in enjoyment of his work probably will not live to as ripe an old age as will the person not thus marked by these well-developed emotional interests. We cannot expect that students will believe such artificially manufactured 'facts' as these or that he will keep his respect for psychology when he sees such twistings of facts and of meanings of words.

Some Fallacies Which Have Obstructed the Acceptance of a Motivational Theory

Our conclusion has been, therefore, that the whole framework of the discussion of emotion as disorganizing has been absurdly inadequate. It is not enough to leave the matter in this form, however. It is not sufficient to criticize such a concept adversely, because the question then would come, "All right, but how else can we think about emotions?" This is a legitimate question. Indeed, if there were no alternative concept, we probably would not be inclined to object so strongly to what has been said.

To get some satisfactory alternative, we will need, of course, to get some agreement as to the subject-matter to be covered by such terms as 'emotion,' and we will need to get some abstract statements about this subject-matter which will represent the best of our available factual knowledge.

To begin with, we can use the 'pointing' method of defining emotion. We can say that emotions are such phenomena as fear, anger, feelings of guilt, feelings of grief, affection, pride in the doing of good work, enjoyment of beautiful music, and enjoyment of companionship. Continuing our pointing, we may say that 'emotions' are to be seen, not merely in cases where these processes occur in intense form, but that

emotion can exist, as Woodworth says, in all degrees of intensity.

We ask, then, what properties mark all of such a diverse collection of phenomena, at least when they are not carried to rare extremes. We have seen that disorganization is not characteristic. Hardly in any sense do we find any disorganization as a product of such emotions as affection or esthetic emotion. Even in such emotions as fear and anger we saw that disorganization occurs ordinarily merely as the price of achieving some dominating organization, and that consequently it is not truly disorganization.

In fact, we seemed to be moving toward the conclusion that, for all emotions, organization is the typical thing. Organization for what? Organization in what sense? When we come to this point, we have to decide whether to trust factual knowledge or whether to trust *a priori* conclusions. Our factual knowledge says that if you can arouse anger in a person you can increase the probability that his behavior will be directed and sustained in a certain direction. If you can arouse sympathy and friendliness, you will increase the likelihood that his behavior will be directed and energized in a different direction. The stronger the emotional process aroused (short of extremes that will perhaps run into qualitatively different effects), the more certainly will his behavior be governed in a way consistent with his emotional reaction. This is a principle which permits prediction and control of human behavior and conscious experience. It might be criticized, of course, as being merely a vague, nonquantitative principle. Any principle is likely to have this character at the start. But that is no serious objection. Scientific work must proceed by a process of approximation and correction.

If this line of argument is sound, it means that emotional processes operate primarily as motives. It means that they are processes which arouse, sustain, and direct activity!

Or, at least, this is what it would seem that they are. But the doctrine of emotion as disorganized or disorganizing does not permit such a statement, even though the disorganization theorists have considered it as a possibility. Thus, P. T. Young makes this amazing statement:

> ". . . there are persistent, purposive activities which arise during emotional upset and which are a part of emotional behavior. Thus, fear is associated with impulses to escape, anger with aggressive attack, sexual emotion with fondling and caressing. Inasmuch as these purposive activities are integrated, they cannot be components of *emotion*—emotion being always disruptive—but they are a part of *emotional behavior*. Thus, emotional behavior includes both integrated components and the signs of disruption.
>
> "The association of certain purposive activities with emotional disturbance is not accidental. The psychological situation which arouses a disturbed state of fear evokes also the precipitate flight from danger. The situation which arouses the emotion of anger also produces aggressive behavior. Thus, organized and disorganized processes normally arise out of the same psychological situation" (11, p. 401).

Now, where in modern science could one find a better example of the kind of thinking that marked the old scholastics—arbitrary definitions, subtle distinctions unsupported by empirical observations, and then deductive argument from those as unquestionable data! What an amazing thing this would be, if what Young asserts were true! In all of the higher animals there are evidently emotional reactions of fear, anger, affection, playfulness, and what not. And, by some mysterious alchemy, these occur at the same time that the organism struggles with unusual intensity and effectiveness to flee, fight, or whatnot.

But these emotional reactions have nothing to do with these unusually-well-motivated actions which they accompany—in fact, though regularly correlated with such, they have exclusively a dragging or hampering influence. As Young insists, "Emotion is always a disruption" (11, p. 400).

Munn argues in much the same way. He says:

> "There are several theories of emotion . . . One, designated the *commonsense theory*, needs little discussion. It assumes that we perceive an emotion-provoking situation, have an emotional experience, and then behave emotionally—as if the emotional experience aroused or stimulated the visceral and skeletal reactions. To the man in the street this is obviously what happens. The psychologist, however, does not accept so naive a view" (5, p. 278).

This is all that he says about this 'commonsense theory.' But why is this commonsense view "too naive for scientific acceptance" (5, p. 282)?

Munn is relying, fairly surely, on the idea that any concept of mind-body interaction is naive and unsound, and that therefore the psychologist cannot say that the conscious experience causes the reaction. Perhaps this is so, but if such is the case, it is equally unsound for him to discuss the James-Lange and thalamic theories as though they might provide some explanation of how certain physiological processes might explain the conscious experience of emotion, because any such theories involve the same assumption of mind-body interaction!

But, after all, in such a matter as this, we do not need to run into such difficulties. If we are willing to talk about conscious experiences, as Munn now is, we can simply state that we conceive of this conscious experience as an aspect of a larger happening or process, partly conscious in character and partly neurological or physiological in character (or partly susceptible to study by neurological or physiological techniques), which occurs under conditions that are presumably discoverable. The James-Lange theory asserts one hypothesis regarding the origins or conditions productive of this complex, partly conscious and partly neurological condition or event. The hypothalamic theory suggests another such hypothesis. But, in the same basic terms, it is quite a possible hypothesis that the perception of the emotion-provoking situation produces the emotional process (which may have a conscious aspect to it, and which may produce also an autonomic discharge, either directly or via some subcortical centers, and which may then be reinforced or supported by widespread bodily changes). And it is quite a possible hypothesis that this emotional process (perhaps as reinforced by interoceptive impulses from visceral reactions or proprioceptive impulses from general tonus changes) then operates to motivate behavior. In fact, from what we know, this seems to be decidedly the least naive of the three theories!

One might well ask, "On what basis, then, did Young and Munn decide that the emotional process is such a parasitic phenomenon, occurring at the same time at which unusually effective organization is needed, but operating solely to produce disorganization?" It may seem odd (and indeed it *is* odd in the work of persons as capable and careful), but the simple fact is that they had no basis other than the doctrinaire premise that emotions are always disruptive. For after all, by the same procedure, we could demonstrate that bodily drives such as hunger and thirst are always disruptive, basing our argument on the observation that a person's previous activities become disorganized when he becomes hungry or thirsty, his thinking becomes ineffective about other matters, he loses his ability, perhaps, to

inhibit certain tendencies, etc. Then, confronted with the evidence that some very effective food-seeking occurs while the person is hungry, we could merely dismiss this with Young's type of argument, as by saying, "The association of such adaptive and integrative activity with hunger is not accidental. The same situation which evokes the hunger also evokes the food-seeking activity. Inasmuch as food-seeking is integrated, it cannot be dependent on hunger—bodily drives being always disruptive!" The logic of such a statement would be exactly parallel to that which Young has used with reference to emotion.

But, obviously, Young and the other workers have not argued in this way about the bodily drives. Why, then, have they reasoned in one way on one matter, and in the other way on the other matter? The answer seems to be that in our thinking about emotion, perhaps because it has been relatively a neglected problem with general psychologists, we have not been doing a reasonable scientific job. We have been dominated by *a priori* conceptions about emotion. Too commonly we have adopted, for all practical purposes, a faulty representation of psychological functions which was started back in the late 1700's—a division of psychological processes into those of cognition, affection, and conation. The view adopted by Young, Munn, and the others is essentially that same view, that matters of feeling or emotion (or, affection) are fundamentally different from matters of striving or motivation (or, conation). But it is time that psychology issued a declaration of independence from this antique tradition, and it is time that this declaration of independence took the form, not merely of change of words, but also of a rejection of the false dichotomy between affection and conation which that eighteenth-century view contained.

THE ESSENTIAL POINT OF A MOTIVATIONAL THEORY OF EMOTION

What would be the view that might be adopted instead of the view that emotions are primarily disorganized or disorganizing? It would be the view that emotional processes are one of the fundamental means of motivation in the higher animals—a kind of motivation which rests on relatively complex neural activities rather than primarily on definite chemical states or definite receptor stimulation, as in the case of bodily drives or physiological motives such as hunger, thirst, toothache, and craving for salt. In lower animals, such as a clam, there probably are no such emotional processes, but merely the physiological motives. But, as evolution proceeded, a need for additional motives appeared. Animals became more complex in their receptor equipment, motor equipment, and capacity for learning. As such complex creatures developed, those that were motivated merely by the long-established physiological motives were not so well equipped for survival. The animal that did not make avoiding responses until it was grabbed by an enemy was less likely to survive than an animal capable of reactions of fear that would be set off by relatively slight stimuli. The animal that had an interest in its offspring—even in the case of the male and in the case of the female even beyond the period of nursing the young—was more likely to reproduce its kind. The primate that had an almost insatiable urge to explore was more likely to get the maximum benefit out of its chief asset—its great potential learning capacity—than the animal lacking such motivation.

In other words, the discussion of emotion belongs in the discussion of motivation. When we omit it from this field we may be doing justice to the motivation of clams, but we are not doing

justice to the motivation of human beings, or even to the motivation of chimpanzees or dogs.

If we conceived of emotional processes as motives, however, our conception would have a still further influence. We would no longer be under some pressure to examine, under the heading of emotion, merely those examples, like fear and anger, which half-plausibly have matched the description of emotion as disorganizing. We would no longer be under pressure to say that the emotional development of the child would consist primarily of the child's becoming less emotional as he grows older, as Woodworth has said, but would see this problem in fuller terms.

Indeed, a change of interpretation on this matter could have some highly important applications in our broader psychological thinking as well, and in our modern culture as a whole. We might well learn to see that the task of development and of functioning in human life is not a matter merely of development of skills and of the "brainy life of relation." It is not a matter just of minimizing emotional responses. It is, indeed, a matter of minimizing *some* emotional responses because they are costly physiologically and costly from the standpoint of the happiness of the person. But we would see that the task of development is also a matter of finding means of developing an emotional richness of life. We need to see that emotional functioning is not merely one of the legitimate, but also one of the primary needs of human life. Then we might realize that naziism, for example, was not just an appeal to unhealthy emotional reactions, but that it was probably partly a consequence of the emotional poverty of modern life. We might come to see that education legitimately needs to aim at more than the development of skills and intellectual functions, and that part of the task of education is the development of healthy emotional processes as one of the indispensable assets, after all, of human life.

With this sort of approach, the chapter on emotion could be rescued from its present museum function of collecting little curios on the facial and vocal expression of emotion, the PGR or EDR, some outworn physiological theories of emotion, and so on, and could become really one of the important topics in the field of psychology.

SUMMARY

Psychologists, though resenting the criticism as ill-informed, have too much tended to accept the idea of outsiders that the chief weakness of psychology is an insufficiency of factual knowledge. Actually the chief immaturity of psychology now lies in its theorizing.

Escape from weak theorizing depends on careful definition of terms, on an effort to consider a wide range of relevant factual knowledge, and on taking a lot of time to integrate the thinking on any problem. The common theory of emotion illustrates this analysis. The view expressed by some main textbooks —as by Munn; Shaffer, Gilmer, and Schoen; Young; Boring, Langfield, and Weld; Dockeray; and Woodworth—is that emotion may be understood as a disorganized (or disorganizing) process. This doctrine is not new to psychology. It reflects the supposedly by-gone rationalistic approach to human nature; it is shared in many ways by psychoanalytic thought; and it is encouraged by the emphasis of our technologically highly developed culture.

Such disorganization theorists, however, have not defined their key terms, have not written consistently, and have not related their generalizations to a wide range of factual knowledge. Disorganization properly means that subordinate activities are operating at cross purposes rather than in ways congruous

with some main tendency or function. In terms of such a definition, as contrasted with supposedly rejected value-judgments, emotions produce *organization* rather than disorganization—viscerally, behaviorally, and in conscious experience. They disrupt preceding and incongruous activities, but all integrating activities do the same. Disorganization seen in intense emotion does not give the clue to the general influence of emotion because, as in physiology, extremes cannot be taken as evidence of normal effects. Especially awkward have been the attempts to force the positive emotions to fit the characterization of emotions as disorganizing.

Some of these writers have recognized that emotion often accompanies marked integration of behavior, but have insisted that emotion, "being always disruptive," has nothing to do with this organization seen in "emotional behavior." However, if we use the same logic in thinking about emotion as we use in thinking about physical motives, we are led to the conclusion that emotional processes of all sorts (except perhaps in rarely intense forms) are organizing in their influence and should be studied as an aspect of the motivation of the higher animals. Such a change of theory of emotion would have significant implications, not only for many theoretical problems in psychology, but also for much of our practical understanding of human nature.

The whole discussion tends to suggest that the greatest weakness of psychology now lies in its methods of formulating and testing theoretical formulations rather than in its incomplete factual knowledge.

REFERENCES

1. BORING, E. G., LANGFELD, H. S., & WELD, H. P. *Introduction to psychology.* New York: John Wiley & Sons, 1939. Pp. xxii + 652.
2. DOCKERAY, F. *Psychology.* New York: Prentice-Hall, 1942. Pp. xiv + 504.
3. HULL, C. L. *Principles of behavior.* New York: D. Appleton-Century, 1943. Pp. x + 422.
4. ICHHEISER, G. Why psychologists tend to overlook certain "obvious" facts. *Phil. Sci.*, 1943, **10**, 204–207.
5. MUNN, N. L. *Psychology: the fundamentals of human adjustment.* Boston: Houghton Mifflin, 1946. Pp. xviii + 497.
6. RUCH, F. L. *Psychology and life.* Chicago: Scott, Foresman, 1941 (2d edition). Pp. xii + 754.
7. SACHS, H. *Freud: master and friend.* Cambridge: Harvard University Press, 1944. Pp. 195.
8. SHAFFER, L. F. *The psychology of adjustment.* Boston: Houghton Mifflin, 1936. Pp. xxi + 600.
9. ——, GILMER, B., & SCHOEN, M. *Psychology.* New York: Harper & Bros., 1940. Pp. xii + 521.
10. WOODWORTH, R. S. *Psychology.* New York: Henry Holt, 1940 (4th edition). Pp. xiii + 639.
11. YOUNG, P. T. *Emotion in man and animal: its nature and relation to attitude and motive.* New York: John Wiley & Sons, 1943. Pp. xiii + 422.
12. ——. *Motivation of behavior.* New York: John Wiley & Sons, 1936. Pp. xviii + 562.

COGNITION OF THE PARTICULAR AND OF THE GENERIC

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INTRODUCTION

All experience, all behavior, all individuals can be reacted to by the psychologist in either of two ways: He may study an experience or a behavior in its own right, as unique and idiosyncratic, *i.e.*, as different from any other experience or person or behavior in the whole world. Or he may respond to the experience not as unique, but as typical, *i.e.*, as an example or representative of one or another class, category or rubric of experience. This is to say that he does *not* in the strictest sense examine, attend to, perceive, or even experience the event; his reaction is rather like that of the file clerk who perceives only enough of the page to be able to file it under A or B, etc. For this activity the name 'rubricizing' might be suggested. For those who dislike neologisms the term 'abstracting$_{BW}$' might be preferable. The subscript letters B and W stand for Bergson (4) [1] and Whitehead (24), the two thinkers who contributed most to the concept.[2]

Such a distinction is a natural by-product of any serious concern with the basic theories which underlie psychology. In general, most American psychological activity proceeds 'as if' reality were fixed and stable rather than changing and developing (a state rather than a process), and as if it were discrete and additive rather than interconnected and patterned. This blindness to the dynamic and holistic aspects of reality is responsible for many of the

[1] "Even where it (reason) confesses that it does not know the object presented to it, it believes that its ignorance consists only in not knowing which one of its time-honored categories suits the new object. In what drawer, ready to open, shall we put it? In what garment, already cut out, shall we clothe it? Is it this, or that, or the other thing? And 'this,' and 'that,' and 'the other thing' are always something already conceived, already known. The idea that for a new object we might have to create a new concept, perhaps a new method of thinking, is deeply repugnant to us. The history of philosophy is there, however, and shows us the eternal conflict of systems, the impossibility of satisfactorily getting the real into the ready-made garments of our ready-made concepts, the necessity of making to measure. But, rather than go to this extremity, our reason prefers to announce once for all, with a proud modesty, that it has to do only with the relative, and that the absolute is not in its province. This preliminary declaration enables it to apply its habitual method of thought without any scruple, and thus, under pretense that it does not touch the absolute, to make absolute judgments upon everything. Plato was the first to set up the theory that to know the real consists in finding its Idea, that is to say, in forcing it into a pre-existing frame already at our disposal—as if we implicitly possessed universal knowledge. But this belief is natural to the human intellect, always engaged as it is in determining under what former heading it shall catalogue any new object; and it may be said that, in a certain sense, we are all born Platonists" (4, pp. 55–56).

[2] The interested reader may be referred here to the psychological writers who have made differentiations more or less similar to the one presented in this paper. Kurt Lewin's (16) contrast between the Aristotelian and Galilean approaches to science, Gordon Allport's (1) plea for an 'idiographic' as well as a 'nomothetic' approach to the science of personality, and most recently, the general semanticists' stress on the differences rather than the likenesses between experiences (14), all overlap the thesis of this paper and have been used freely in its preparation. We shall also mention below several of the interesting questions raised by Kurt Goldstein's abstract-concrete dichotomy (8).

weaknesses and failures of academic psychology. Even so, it is not necessary to create a dichotomy of opposition, or to 'choose up sides' to do battle. There is stability as well as change, similarities as well as differences, and holism-dynamicism can be as one-sided and doctrinaire as atomism-staticism. If we emphasize the one at the expense of the other, it is because this is necessary to round out the picture and restore balance.

This paper proposes to discuss some of the problems of cognition in the light of these theoretical considerations. The writer especially hopes to communicate some of his conviction that much of what passes for cognition is actually a substitute for it, a second-hand trick made necessary by the exigencies of living in a flux-and-process reality without being willing to acknowledge this fact. Because reality is dynamic, and because the modern Western mind can cognize well only what is static, much of our attending, perceiving, learning, remembering, and thinking actually deals with staticized abstractions from reality or with theoretical constructions rather than with reality itself.

RUBRICIZING IN ATTENTION

Insofar as the concept of attending differs at all from the concept of perceiving, it is in a relatively greater stress on selective, preparatory, organizing and mobilizing actions. These need not be pure and fresh responses which are determined entirely by the nature of the reality attended to. It is a commonplace that attending is determined as well by the nature of the individual organism, by the person's interests, motives, prejudices, past experiences, etc.

What is more to our point, however, is the fact that it is possible to discern in the attending responses the dichotomy between fresh, idiosyncratic attending to the unique event and stereotyped, rubricized recognition in the outside world of a set of categories which already exist in the mind of the attending person. That is, attending may be no more than a recognition or discovery in the world of what we ourselves have already put there—a sort of pre-judging of experience before it happens. It may be, so to speak, a rationalization for the past, or an attempt to maintain the status quo, rather than a true recognition of change, novelty and flux. This can be achieved by attending only to that which is already known, or by forcing the novel into the shape of the familiar.

The advantages and disadvantages for the organism of this stereotyping of attention are equally obvious. It is evident that full attention is not needed for mere rubricizing or class-placing of an experience, which in turn means saving of energy and effort. Rubricizing is definitely less fatiguing than wholehearted attending. Furthermore, rubricizing does not call for 'concentration,' it does not demand *all* the resources of the organism. Concentrated attention which is necessary for the perceiving and understanding of an important or novel problem is, as we all know, extremely wearing and is, therefore, relatively rare. Testimony for this conclusion is found in the public preference for streamlined reading, condensed novels, digest magazines, stereotyped movies, cliché-laden conversation and, in general, avoidance of real problems, or at least, a strong preference for stereotyped pseudo-solutions.

Rubricizing is a partial, token or nominal response rather than a total one. This makes possible automaticity of behavior, *i.e.*, doing several things at the same time, which in turn means making possible 'higher' activities by permitting 'lower' activities to be carried on in a reflex-like fashion. In a word, we do not have to 'notice' or pay

attention to the familiar elements of experience. Thus we need not perceive as individuals, waiters, doormen, elevator operators, streetcleaners, men in any sort of uniform, etc.[3]

There is a paradox involved here, for it is simultaneously true that we tend (a) *not* to notice that which does not fit into the already constructed set of rubrics, *i.e.*, the strange, and (b) it is the unusual, the unfamiliar, the dangerous or threatening which are *most* attention-compelling. An unfamiliar stimulus may be either dangerous (a noise in the dark) or not (new curtains on the windows). Fullest attention is given to the unfamiliar-dangerous; least attention is given to the familiar-safe; an intermediate amount is given to the unfamiliar-safe or else it is transformed into familiar-safe, *i.e.*, rubricized.[4]

There is an interesting speculation which proceeds from the curious tendency that the novel and strange either attract no attention at all or attract it overwhelmingly. It would seem that a large proportion of our population responds with attention only to threatening experiences. It is as if attention were to be regarded only as a response to danger and as a warning of the necessity for an emergency response. These people brush aside experiences which are non-threatening and not dangerous, as therefore not being worthy of attention or any other response, cognitive or emotional. For them, life is either a meeting of dangers or relaxation between dangers.

But there are some people for whom this is not so. These are the people who will respond not only to dangerous situations. Probably feeling more safe and secure fundamentally, they can afford the luxury of responding to, noticing, and even thrilling with experiences which are not dangerous but pleasantly exciting, etc. It has been pointed out that this positive response, whether mild or strong, whether a slight titillation or an overwhelming ecstasy, is, like an emergency response, a mobilization by the autonomic nervous system, involving the viscera and the rest of the organism. The main difference between these experiences is that one seems to be felt introspectively as pleasant, the other as unpleasant. With this observation, we see that the human being not only adapts to the world in a passive way but also enjoys it, and even imposes himself upon it actively. The factor whose variation seems to account for most of these differences is what may loosely be called mental health. For relatively anxious people, attending is more exclusively an emergency mechanism and the world tends somewhat to be divided simply into the dangerous and the safe.

The truest contrast with rubricizing attention is probably furnished by Freud's concept of 'free floating attention.'[5] Observe that Freud recom-

[3] For more experimental examples, see Bartlett's excellent study (3).

[4] "Nothing is more congenial from babyhood to the end of life than to be able to assimilate the new to the old, to meet each threatening violator or burster of our well known series of concepts, as it comes in, see through its unwontedness and ticket it off as an old friend in disguise. . . . We feel neither curiosity nor wonder concerning things so far beyond us that we have no concepts to refer them to or standards by which to measure them" (12, Vol. II, p. 110).

[5] "For as soon as attention is deliberately concentrated in a certain degree, one begins to select from the material before one; one point will be fixed in the mind with particular clearness and some other consequently disregarded, and in this selection one's expectations of one's inclinations will be followed. This is just what must not be done, however; if one's expectations are followed in this selection there is the danger of never finding anything but what is already known, and if one follows one's inclinations anything which is to be perceived will most certainly be falsified. It must not be forgotten that the meaning of the

mends passive rather than active attending on the grounds that active attention tends to be an imposition of a set of expectations upon the real world. Such expectations can drown out the voice of reality, if it be weak enough. Freud recommends that we be yielding, humble, passive, interested only in finding out what reality has to say to us, concerned only to allow the intrinsic structure of the material to determine that which we perceive. This all amounts to saying that we must treat the experience as if it were unique and unlike anything else in the world and that our only effort must be to apprehend it in its own nature, rather than to try to see how it fits into our theories, our schemes, and our concepts. This is in the most complete sense a recommendation to problem-centering and against ego-centering. To the fullest extent possible, the ego, its experiences and its pre-conceptions, its hopes and its fears are to be put aside if we are to apprehend the *per se,* intrinsic nature of the experience before us.

It may be helpful to make the familiar (even stereotyped) contrast between the approach to an experience by the 'Scientist' and by the 'Artist.' If we may allow ourselves to think of such abstractions as the 'true' Scientist and the 'true' Artist, it is probably accurate to contrast their approach to any experience by saying that the Scientist fundamentally seeks to classify the experience, to relate it to all other experiences, to put it into its place in a unitary philosophy of the world, to look for the respects in which this experience is similar to and different from all other experiences. The Scientist tends to put a name or a label upon the experience, he tends to put it into its place, in a word, to classify it. The Artist, that is if he is what an artist should be, according to Bergson, Croce, *et al.,* is interested only in the unique and idiosyncratic character of his experience. He must treat the experience as an individual. Each apple is unique, different, and so also each model, each tree, each head—no one is quite like any other. As a critic said of a certain artist, "He sees what others only look at." He is in no way interested in classifying the experience or placing it in any mental card catalog which he may have. It is his task to see the experience fresh and then, if he has the talent, to freeze the experience in some way so that perhaps other perspicuous people may also see it fresh. Simmel said it nicely, "The scientist *sees* something because he *knows* something—the artist, however, *knows* something because he *sees* it." [6]

Perhaps another parallel may help to drive the difference home. These same people whom I have called true artists are different from ordinary people in at least one other characteristic. To put

things one hears is, at all events for the most part, only recognizable later on.

"It will be seen, therefore, that the principle of evenly-distributed attention is the necessary corollary to the demand on the patient to communicate everything that occurs to him without criticism or selection. If the physician behaves otherwise he is throwing aside most of the advantage to be gained by the patients' obedience to the 'fundamental rule of psycho-analysis.' For the physicians the rule may be expressed thus: All conscious exertion is to be withheld from the capacity for attention, and one's 'unconscious memory' is to be given full play; or to express it in terms of technique, pure and simple: One has simply to listen and not to trouble to keep in mind anything in particular" (6, Vol. II, pp. 324–325).

[6] Like all stereotypes, these are dangerous. It is one implied point of this paper that scientists would do well to become more intuitive, more artistic, and more appreciative and respectful of raw, direct experience. Likewise, the study and understanding of reality as seen by science should deepen the artist's reactions to the world, in addition to making them more valid and adult. The injunction to both artist and scientist is actually the same: "See reality whole."

it as briefly as I can, they seem to be able to see each sunset, each flower, or each tree with the same delight and awe and full attention and strong emotional reaction as if this were the first sunset or flower or tree they had ever seen. The average person will respond in a commonplace fashion to any miracle, however wonderful, if only he has seen the miracle happen five times before. An honest artist can retain the sense of the miraculous even after these 1000 experiences. "He sees the world with the greater clarity of those for whom it is continuously new."

RUBRICIZING IN PERCEPTION

Stereotyping is a concept that can apply not only to the social psychology of prejudice, but also to the basic process of perceiving. Perceiving may be something other than the absorption or registration of the intrinsic nature of the real event. It is more often a classifying, ticketing or labelling of the experience rather than an examination of it, and ought, therefore, to be called by a name other than true perceiving. What we do in stereotyped or rubricized perceiving is parallel to the use of clichés and hackneyed phrases in speaking.

For instance, it is possible in being introduced to another human being to react to him 'freshly,' to try to understand or to perceive this individual as a unique individual, not quite like anybody else living. More often what we do, however, is to ticket or label or 'place' the man. We place him in a category or a rubric, regard him not as a unique individual, but as an example of some concept or as *a* representation of a category. For instance, he is 'a Chinaman,' rather than Lum Wang Foo who has dreams and ambitions and fears which are quite different from those of his brother. Or a man is labelled as a 'millionaire' or 'a member of society' or 'a dame' or 'a child' or 'a Jew' or a something.[7] In other words, the person engaged in stereotyped perceiving ought to be compared, if we wish to be honest, to a file clerk rather than a camera. The file clerk has a drawer full of folders and her task is to put every letter on the desk into its appropriate folder under the A's or the B's or whatever.

Among the many examples of rubricizing in perceiving, we may cite the tendency to perceive

(a) the familiar and hackneyed rather than the unfamiliar and fresh
(b) the schematized and abstract rather than the actual
(c) the organized, structured, the univalent rather than the chaotic, unorganized and ambiguous
(d) the named or nameable rather than the unnamed and unnameable
(e) the meaningful rather than the meaningless
(f) the conventional rather than the unconventional
(g) the expected rather than the unexpected

Furthermore, where the event is unfamiliar, concrete, ambiguous, unnamed, meaningless, unconventional or unexpected, we show a strong tendency to twist or force or shape the event into a form which is more familiar, more abstract, more organized, etc. We tend to perceive events more easily as repre-

[7] "Such [cheap] fiction represents verbal rigidity in all its forms: content, formal, and evaluational. The plots, characters, action, situations, and 'morals' are relatively standardized. In large measure too, the stories involve standardized words and phrases; it is on this basis, to a considerable extent, that the characters, who are not individuals but *types*, are recognizable as the gun moll, the detective, the poor working girl, the boss's son, etc." (14, p. 259).

The general semanticist would also point out that once an individual has been placed in a category, others tend to react to the category rather than to the individual.

sentatives of categories than in their own right, as unique and idiosyncratic.

Numerous illustrations of each of these tendencies can be found in the Rorschach test, the literatures of Gestalt psychology, of projective testing, and of the theory of art. Hayakawa (10, p. 103), in this last area, cites the example of an art teacher who "is in the habit of telling his pupils that they are unable to draw any individual arm because they think of it as an arm; and because they think of it as an arm they think they know what it ought to be."

It is obvious that one needs to know less about a stimulus object for the purpose of filing it in an already constructed system of categories than for the purpose of understanding and appreciating it. True perception, which would encompass the object, play over all of it, soak it in, and understand it, would obviously take infinitely more time than the fraction of a second which is all that is necessary for labelling and cataloging.

It is also probable that rubricizing is far less efficient than fresh perception, mostly because of this already mentioned characteristic of being possible in a fraction of a second. Only the most outstanding characteristics can then be used to determine the reaction and these can very easily give a false lead. Rubricizing perception then is an invitation to mistakes.

These mistakes become doubly important because rubricizing perception also makes it less probable that any original mistake will be corrected. One who has already been put into a rubric tends very strongly to be kept there, because any behavior which contradicts the stereotype of the rubric can be regarded simply as an 'exception' which need not be taken seriously. For instance, if we have become convinced for some reason that a person is dishonest, and if then, in one particular card game, we try to catch him, only to fail, we ordinarily continue to call him a thief, assuming that he was honest for *ad hoc* reasons, perhaps out of fear of detection or out of laziness or the like. If we are profoundly enough convinced of his dishonesty, it may make no difference if we *never* catch him in a dishonest act. He might then be regarded simply as a thief who happens to be afraid to be dishonest with us. Or contradictory behavior may be regarded as 'interesting,' in the sense of being not characteristic of the essence of the person but rather only superficially put on. If we are perfectly convinced that Chinese are inscrutable, then to find one who laughs does not change our stereotype of the Chinese, but we are rather apt to regard him simply as a queer or exceptional or peculiar Chinese. Indeed it may be that the concept of stereotyping or rubricizing may furnish us with a good part of the answer to the age-old problem of how people can continually believe in falsehood even when truth stares them in the face year after year. I know it is customary to consider this imperviousness to evidence as entirely explained by repression or, in general, motivational forces. There is no doubt that this statement is also true. The question is whether it is the whole truth and, in and of itself, a sufficient explanation. Our discussion indicates that there are other reasons for being blind to evidence.

We can get some inkling of the violence which can be done to an object if we ourselves are on the receiving end of a stereotyping attitude. Of course, any Negro or any Jew could attest to this but it is also true at times of everyone else. See, for instance, such expressions as "Oh, it's just the waiter," or "It is another of those Joneses," etc. We ordinarily feel insulted and unappreciated if we are thus casually put into a parcel with a lot of other people

from whom we feel different in many ways. But it is impossible to improve on William James's statement on the subject: "The first thing the intellect does with an object is to class it along with something else. But any object that is infinitely important to us and awakens our devotion feels to us also as if it must be *sui generis* and unique. Probably a crab would be filled with a sense of personal outrage if it could hear us class it without ado or apology as a crustacean, and thus dispose of it. 'I am no such thing,' it would say; 'I am MYSELF, MYSELF alone'" (13, p. 10).

RUBRICIZING IN LEARNING

A habit is an attempt to solve a present problem by using a previously successful solution. This implies that there must be (a) a placing of the present problem in a certain category of problems and (b) a selection of the most efficient problem solution for this particular category of problems. Classification, *i.e.*, rubricization, is therefore inevitably involved.

The phenomenon of habit illustrates best a point which is also true of rubricized attention, perceiving, thinking, expression, etc., namely, that all rubricizing is, in effect, an attempt to 'freeze the world.'[8] In actuality, the world is a perpetual flux and all things are in process. In theory, nothing in the world is static (even though for *practical* purposes, many things are). If we are to take theory quite seriously, then each experience, each event, each behavior is in some way or other (whether important or unimportant) different from every other experience, behavior, etc. that has occurred in the world before or will ever occur again.[9]

It would seem reasonable then, as Whitehead has repeatedly pointed out, to base our theories and philosophies of science and common sense squarely upon this basic and unavoidable fact. The truth is that most of us do not do this. Even though our most sophisticated scientists and philosophers have long ago discarded the old concepts of empty space and enduring things moving around aimlessly in it, these verbally discarded concepts still live on as a basis for all our less intellectual reactions. Though the world of change and growth is and must be accepted, this is rarely done emotionally and with enthusiasm.

All reactions which may be labelled rubricized may then be redefined as "efforts to freeze or staticize or stop the motion of a moving, changing process-world in order to be able to handle it," for it is as if we could handle this world

[8] "Intellect therefore instinctively selects in a given situation whatever is like something already known; it seeks this out, in order that it may apply its principle that 'like produces like.' In just this does the prevision of the future by common sense consist. Science carries this faculty to the highest possible degree of exactitude and precision, but does not alter its essential character. Like ordinary knowledge, in dealing with things science is concerned only with the aspect of *repetition*. Though the whole be original, science will always manage to analyze it into elements or aspects which are approximately a reproduction of the past. Science can work only on what is supposed to repeat itself . . ." (4, pp. 34–35).

[9] "No two things are alike and no one thing stays the same. If you are clearly aware of this, it is quite all right to act as though some things were alike, and to act as though some things stayed the same—to act according to habit. It is all right, because a difference to be a difference must make a difference, and some differences don't, sometimes. So long as you realize that there always are differences nonetheless, and that you have to judge whether they do make any difference, you can be trusted with a habit, because you will know when to set it aside. No habit is foolproof. Habits are useful to people who do not depend on them, or insist on following them, regardless of circumstances; for less judicious individuals, habits tend to make for inefficiency, stupidity, and danger" (14, p. 199).

only when it is not in motion. An example of this tendency is the ingenious trick which static-atomistic mathematicians have invented in order to treat motion and change in a motionless way, *i.e.*, the calculus. For the purposes of this paper, psychological examples are more pertinent, however, and it is necessary to pound home the thesis that habits, and indeed all reproductive learning, are examples of this tendency by statically minded people to freeze a process-world into temporary immobility since they cannot manage or cope with a world in a flux.

Habits are then conservative mechanisms, as James long ago pointed out (12). Why is this so? For one thing, because any learned reaction, merely by existing, blocks the formation of other learned reactions to the same problem. But there is another reason, just as important, but ordinarily neglected by the 'learning theorists'—namely, that learning is not only of muscular responses but of affective preferences as well. Not only do we learn to speak English but we learn to like and prefer it (19).[10] Learning is not then a completely neutral process. We cannot say, "If this reaction is a mistake, it is easy enough to unlearn it or replace it with the right reaction," for by learning, we have, to some degree, committed ourselves and our loyalties. Thus, if it is our desire to learn to speak French well, it may be better not to learn it at all if the only available teacher has a bad accent; it could be more efficient to wait until a good teacher is available. For this same reason we must disagree with those in science who are very airy in their attitude toward hypotheses and theories. "Even a false theory is better than none," they say. The true situation is not as simple as this, if the foregoing considerations have any validity. As a Spanish proverb says, "Habits are at first cobwebs, then cables."

These strictures by no means apply to all learning; they apply only to atomistic and reproductive learning, *i.e.*, recognition and recall of isolated *ad hoc* reactions. Many psychologists write as if this were the only way in which the past could have an influence upon the present, or in which the lessons of past experience may profitably be used to solve present problems. This is a naive assumption, for much of what is actually learned in the world, *i.e.*, the most important influences of the past, is neither atomistic nor reproductive. The most important influence of the past, the most influential type of learning, is what we may call 'character learning,' *i.e.*, all the effects upon character of all our experiences. Thus, experiences are not acquired by the organism one by one like so many coins; if they have any deep effect at all, they change the whole person. Thus the influence of some tragic experience would be to change him from an immature person to a more mature adult, wiser, more tolerant, more humble, better able to solve *any* of the problems of adult life. The contrasting theory would be that he had changed in no way except by the *ad hoc* acquisition of a technique of managing or

[10] *Anthologistics*

"Since one anthologist put in his book
Sweet things by Morse, Bone, Potter, Bliss and Brook,
All subsequent anthologists, of course,
Have quoted Bliss, Brook, Potter, Bone and Morse.
For, should some rash anthologist make free
To print selections, say, from you and me,
Omitting with a judgment all his own
The classic Brook, Morse, Potter, Bliss and Bone,
Contemptuous reviewers, passing by
Our verses, would unanimously cry,
'What manner of anthology is this
That leaves out Bone, Brook, Potter, Morse and Bliss!' "

—Arthur Guiterman

For another example, see almost any textbook in general psychology.

solving such and such a particular type of problem, *e.g.*, the death of his mother. Such an example is far more important, far more useful, far more paradigmatic than the usual examples of blind association of one nonsense syllable with another, which experiments, in my opinion, have to do with nothing in the world except other nonsense syllables.[11]

If the world is in process, then every moment is a new and unique one. Theoretically speaking, *all* problems must be novel. The typical problem, according to process theory, is the problem that has never been faced before and which is, in essential ways, unlike any other problem. That problem which very much resembles past problems is then, according to this theory, to be understood as a special case rather than as a paradigmatic one. If this is so, then recourse to the past for *ad hoc* solutions is as likely to be dangerous as helpful. My belief is that actual observation will show this to be practically as well as theoretically true. In any case, nobody, whatever his theoretical bias, will argue about the fact that at least *some* of the problems of life are novel and must therefore have novel solutions.[12]

From the biological point of view, habits play a double role in adaptation because they are simultaneously necessary and dangerous. They necessarily imply something which is not true, *i.e.*, a constant, unchanging, static world, and yet are commonly regarded as one of the human being's most efficient tools of adaptation, which certainly implies a changing, dynamic world. A habit is an already formed reaction to a situation or answer to a problem. Because it is already formed, it develops a certain inertia and resistance to change.[13] But when a situation changes, our reaction to it should also change or be ready to change quickly. Therefore, the presence of a habit may be worse than no reaction at all, since the habit guarantees resistance to and delay in building up the newly necessary reaction to the new situation. In a similar connection, Bartlett speaks of the "challenge of an external environment which partially changes and in part persists, so that it demands a variable adjustment yet never permits an entirely new start" (3, p. 224).

[11] "Memory, as we have tried to prove, is not a faculty of putting away recollections in a drawer, or of inscribing them in a register. There is no register, no drawer; there is not even, properly speaking, a faculty, for a faculty works intermittently, when it will or when it can, whilst the piling up of the past upon the past goes without relaxation. . . .

"But, even though we may have no distinct idea of it, we feel vaguely that our past remains present to us. What are we, in fact, what is our *character*, if not the condensation of the history that we have lived from our birth—nay, even before our birth, since we bring with us prenatal dispositions? Doubtless we think with only a small part of our past, but it is with our entire past, including the original bent of our soul, that we desire, will and act. Our past, then, as a whole, is made manifest to us in its impulse; it is felt in the form of tendency, although a small part of it only is known in the form of idea" (4, pp. 7–8).

[12] "Precisely because it is always trying to reconstitute, and to reconstitute with what is given, the intellect lets what is *new* in each moment of a history escape. It does not admit the unforeseeable. It rejects all creation. That definite antecedents bring forth a definite consequent, calculable as a function of them, is what satisfies our intellect. That a definite end calls forth definite means to attain it, is what we also understand. In both cases we have to do with the known which is combined with the known, in short, with the old which is repeated" (4, p. 180).

[13] "The capacity to be influenced by past reactions, often—but very likely somewhat inaccurately—called 'modification by experience,' on the whole conflicts with the demand, issued by a diverse and constantly changing environment, for adaptability, fluidity, and variety of response. Its general effect is twofold: to lead to stereotyped behavior and to produce relatively fixed serial reactions" (3, p. 218).

It may help to make this clearer if we describe this paradox from another point of view. We may then say that habits are built up to save time, effort, and thought in dealing with recurrent situations. If a problem comes up again and again in similar form, we certainly can save a good deal of thought by having available some habitual answer which can be automatically trotted out to deal with this recurrent problem whenever it arises. Thus, a habit is a response to a repetitive, unchanging, familiar problem. This is why it is possible to say that a habit is an 'as if' reaction—"as if the world were static, unchanging, and constant." This interpretation is borne out, of course, by the uniform stress upon repetition by those psychologists who are impressed with the primary importance of habit as an adjustive mechanism.

A good deal of the time this is just as it should be, for there is no doubt that many of our problems are actually repetitive, familiar, and relatively unchanging. The man who is engaged in what are called the 'higher' activities, thinking, inventing, creating, finds that these activities demand, as a prerequisite, elaborate sets of innumerable habits which automatically solve the petty problems of every-day life, so that the creator is free to give his energy to the so-called higher problems. But a contradiction is involved—even a paradox. In actual fact, the world is not 'static, familiar, repetitive, and unchanging.' Instead, it is constantly in flux, ever new, always developing into something else, shifting, and changing. We need not argue as to whether this is a fair characterization of every aspect of the world; we can avoid unnecessary metaphysical debate by assuming for the sake of argument that some aspects of the world are constant, while some are not. If this is granted, then it must also be granted that however useful habits may be for the constant aspects of the world, they are positively a hindrance and an impediment when the organism has to deal with the changing, fluctuating aspects of the world with problems which are unique, novel, never before met with.[14]

Here then we have the paradox. Habits are simultaneously necessary and dangerous, useful and harmful. They undoubtedly save us time, effort and thought, but at a big expense. They are a prime weapon of adaptation and yet they hinder adaptation. They are problem solutions and yet in the long run they are the antonyms of fresh, unrubricized thinking, that is to say, of solutions to new problems. Though useful in adjusting ourselves to the world, they often hinder us in our inventiveness and creativeness, which is to say they tend to prevent our adjusting the world to ourselves. Finally,

[14] "The picture is one of human beings confronted by a world in which they can live and be masters only as they learn to match its infinite diversity by increasing delicacy of response, and as they discover ways to escape from the complete sway of immediate circumstances" (3, p. 301).

"Our freedom, in the very movements by which it is affirmed, creates the growing habits that will stifle it if it fails to renew itself by a constant effort: it is dogged by automatism. The most living thought becomes frigid in the formula that expresses it. The word turns against the idea. The letter kills the spirit" (4, p. 141).

"Habit can be an accessory to progress, but it is not the chief means to it. It should be regulated from that point of view. It is an accessory to progress insofar as it saves time and conserves energy—but there is no progress, even so, unless the time so saved and the energy so conserved are used in the intelligent modification of other behavior. The more habitual shaving becomes for you, for example, the more free you are, while shaving, to consider problems that are of some importance to you. There is much advantage in this—unless, in considering these problems, you always arrive at the same conclusions" (14, p. 198).

they tend to *replace*, in a lazy way, true and fresh attending, perceiving, learning, and thinking.[15]

It might be added finally that reproductive memory is much more difficult *unless* a set of rubrics (frame of reference) is available. The interested reader is referred to Bartlett's excellent book (3) for experimental support for this conclusion. We might add one other example here which fortunately can also be easily checked. The writer found during a summer's field work with an Indian tribe that he could not remember the Indian songs which he liked very much, however often he tried. It was possible to sing the song along with the Indian singer perhaps a dozen times, and then only five minutes later not be able to repeat it alone. For any person with a good musical memory this can be a baffling experience, understandable only when it is realized that Indian music is so different in basic organization and quality that there is no frame of reference against which to remember it. A simpler example which everyone will have met with is the difference in difficulty for an English-speaking person in learning, let us say, Spanish on the one hand and, on the other hand, some Slavic language like Russian. Most words in Spanish or French or German have cognates that the English-speaking person can use as a frame of reference. But since these cognates are almost entirely missing in Russian, learning the language becomes extraordinarily difficult.

RUBRICIZING IN THINKING

In this area rubricizing consists of (a) having only stereotyped problems, or in failing to perceive new ones, or in reshaping them, in a Procrustean fashion, so that they may be classified as familiar rather than novel, and/or (b) using only stereotyped and rote habits and techniques for solving these problems, and/or (c) having, in advance of all of life's problems, sets of ready-made, cut and dried solutions and answers. These three tendencies add up to an almost complete guarantee against creativeness or inventiveness.[16] But they impel us so strongly that so profound a psychologist as Bergson was impelled mistakenly to define intellect as though it could do nothing more than rubricize, *e.g.*, "Intellect [is] . . . the faculty of connecting the same with the same, of perceiving and also of producing repetition" (4, p. 59). "Explaining it always consists in resolving it, it the unforeseeable and new, into elements of old or known, arranged in a different

[15] "Thus the four factors mentioned—natural laziness or simian reluctance, fondness of assimilating the new to the old, tradition and success—have contributed to keep our thought undeveloped. The periods of really intense intellectual ferment and tradition shattering thinking have been extraordinarily few within the historical period. The thinking of Plato and Aristotle sufficed from Greek times to the Renaissance, and the thinking of Galileo and Descartes at the Renaissance has furnished natural science with a stock of fundamental notions that have needed little revision until recent times. Thus during most of the intervening times thinking has chiefly been a process of working out . . ." (26, p. 223).

[16] ". . . clarity and orderliness enable the possessor to deal with foreseen situations. They are necessary foundations for the maintenance of existing social situations. And yet they are not enough. Transcendence of mere clarity and order is necessary for dealing with the unforeseen, for progress, for excitement. Life degenerates when enclosed within the shackles of mere conformation. A power of incorporating vague and disorderly elements of experience is essential for the advance into novelty" (25, p. 108).

"The essence of life is to be found in the frustrations of established order. The Universe refuses the deadening influence of complete conformity. And yet in its refusal, it passes toward novel order as a primary requisite for important experience. We have to explain the aim at forms of order, and the aim at novelty of order, and the measure of success, and the measure of failure" (25, p. 119).

order. The intellect can no more admit complete novelty than real becoming; that is to say, here again it lets an essential aspect of life escape, . . ." (4, p. 181). ". . . we treat the living like the lifeless and think all reality, however fluid, under the form of the sharply defined solid. We are at ease only in the discontinuous, in the immobile, in the dead. *The intellect is characterized by a natural inability to comprehend life*" (4, p. 182).

A. *Stereotyped Problems.* To start with, the first effort of that person who tends strongly to rubricize will ordinarily be to avoid or overlook problems of any kind. In most extreme form this is exemplified by those compulsive-obsessive patients who regulate and order every corner of their lives because they dare not face anything unexpected. Such people are severely threatened by any problem which demands more than a ready-made answer, *i.e.*, which demands self-confidence, courage, security.

If the problem *must* be perceived, then the first effort is to 'place' the problem and to see it as a representative of a familiar category (since the familiar does not produce anxiety). The attempt is to discover "Into which class of previously experienced problems can this particular one be placed?" or "Into which category of problems does this fit—or can it be squeezed?" Such a placing reaction is possible of course only on the basis of perceived resemblances. We do not wish to go into the difficult problem of 'similarity'; it is sufficient to point out that this perception of resemblances need not be a humble, passive registration of the intrinsic nature of the realities perceived. This is proven by the fact that various individuals, classifying in terms of idiosyncratic sets of rubrics, can nevertheless *all* be successful in rubricizing the experience. Such people do not like to be at a loss and will classify all experiences which cannot be overlooked, even if they find it necessary to cut, squeeze, or distort the experience.

The best writing I know on this subject is that of Crookshank (5) on the problems involved in medical diagnosis. Psychologists will be more familiar with the strictly taxonomical attitude of most psychiatrists toward their patients.

2. *Stereotyped Techniques.* Generally, one of the main advantages of rubricizing is that along with successfully placing of the problem goes an automatically available set of techniques for handling this problem. This is not the only reason for rubricizing. That the tendency to place a problem is very deeply motivated is seen, *e.g.*, in the physician who feels more easy in the presence of a known, though incurable, disease than in the presence of a completely mysterious set of symptoms.

If one has handled this 'same' problem many times before, the proper machinery will be well-oiled and ready to use. Of course, this means a strong tendency to do things as they have been done before, and as we have seen, habitual solutions carry disadvantages as well as advantages. As advantages we may list again ease of execution, energy saving, automaticity, affective preference, anxiety saving, etc. The main disadvantages are loss of flexibility, adaptability and creative inventiveness, *i.e.*, the usual consequences of assuming that this dynamic world can be treated as if it were static.

An excellent example of the effects of stereotyped thinking techniques is furnished by Luchin's interesting experiments on *Einstellung* (18).

C. *Stereotyped Conclusions.* Probably the best known example of this process is 'rationalization.' This and similar processes may be defined for our purposes as having a ready-made idea or foregone conclusion and then devoting a good deal of intellectual activity

to supporting this conclusion or finding evidence for it. This is the kind of activity which has only a thinking-like façade. It is not thinking in the best sense because it comes to its conclusions irrespective of the nature of the problem. The knitting of the brow, the heated discussions, the straining after evidence are all so many smoke screens; the conclusion was fated before the 'thinking' ever began. Often enough even the façade is lacking; people may simply *believe* without even making the gesture of seeming to think. This takes even less effort than rationalizing.

Every psychologist knows that it is possible for a person to live by a set of ready-made ideas which were acquired complete and entire during the first decade of life and which have never and shall never be changed in the slightest degree. It is true that such a man may have a high I.Q. He may therefore be able to spend a good deal of his time in 'intellectual' activity, selecting out from the world whatever bits of evidence support his ready-made ideas. We cannot deny that this sort of activity may occasionally be of some use to the world and yet it seems clearly desirable for the psychologist to make some sort of verbal differentiation between productive, creative thinking on the one hand and even the most skillful rationalizing on the other. The occasional advantages of rationalizing are a small matter when weighed against the more impressive phenomena of blindness to the real world, imperviousness to new evidence, distortion in perceiving and remembering, the loss of modifiability and adaptability to a changing world and other indications that the mind has ceased to develop.

But rationalization need not be our only example. It is also rubricizing when the problem is used as a stimulus to associations from among which are chosen those which best fit the particular occasion.

It would seem that rubricized thinking has a special affinity for and relationship to reproductive learning. The three types of processes that we have listed could easily be dealt with as special forms of habit activity. There is clearly involved a special reference to the past. 'Problem solving' becomes little more than a technique of classifying and solving any new problem in the light of past experience. Thinking of this type then often amounts to no more than a shuffling about and rearrangement of previously acquired habits and memories of the reproductive type.

The contrast with more holistic-dynamic thinking can be seen more clearly when we understand that this latter type of thinking is more clearly allied to the perceptual processes than to the memory processes (15, 22). The main effort in holistic thinking is perceiving as clearly as possible the intrinsic nature of the problem with which one is confronted, as Wertheimer stresses in his recent book (22) and which Katona (15) phrases as "the effort to perceive *in* a problem its solution." [17] It is examined carefully in its own right and in its own style almost as if no other such problem had been met before. The effort is to ferret out its own intrinsic, *per se* nature, whereas in associative thinking it is rather to see how this problem relates to or resembles other

[17] It is interesting to observe that the thinking of the Gestalt psychologists parallels in this respect that of various modern philosophers who are often apt to think of a problem-solution as identical or tautologous with the problem itself, *e.g.*, "When there is a full understanding, any particular item belongs to what is already clear. Thus it is merely a repetition of the known. In that sense, there is tautology" (25, p. 71). I believe that the logical positivists also maintain such a position.

problems previously experienced.[18] This is not to imply that past experience is not used in holistic thinking. Of course it is. The point is that it is used in a different way, as has been described in the discussion above of so-called character learning.

That associative thinking occurs there is no doubt. The debate is rather over which kind of thinking shall be used as the centering point, as the paradigm, or as the ideal model. The contention of the holistic-dynamic theorists is that thinking activity, if it carries any meaning at all, by definition has the meaning of creativeness, uniqueness, ingenuity, and inventiveness. Thinking is the technique whereby mankind creates something new, which in turn implies that thinking must be revolutionary in the sense of occasionally conflicting with what has already been concluded. If it conflicts with an intellectual status quo it is then the *opposite* of habit, or memory, or what we have already learned, for the simple reason that it must *by definition* contradict what we have already learned. If our past learning and our habits work well, we can respond automatically, habitually, and familiarly. That is to say, we do not have to think. From this point of view, thinking is seen as the *opposite* of learning, rather than as a type of learning. If we were permitted a slight exaggeration, thinking might almost be defined as the ability to *break* our habits and to *disregard* our past experiences.

Another dynamic aspect is involved in the kind of truly creative thinking exemplified by the great achievements of human history. This is its characteristic boldness, daring, and courage. If these words are not *quite* apropos in this connection, they come close enough, as we can see if we think of the contrast between a timid child and a brave child. The timid child must cling closer to his mother who represents safety, familiarity, and protection; the bolder child is freer to venture forth and can go farther from home base. The thinking process which parallels the timid clinging to the mother is the equally timid clinging to habit. The bold thinker—which is almost a redundancy, like saying a thinking thinker—must be able to break the *Einstellung*, to be free of the past, of habit, expectation, learning, custom, and convention, and to be free of anxiety whenever venturing out of the safe and familiar harbor.

Another type of stereotyped conclusion is furnished by those instances in which individuals' opinions are formed by imitation and/or prestige suggestion. These are generally considered to be underlying and basic trends in healthy human nature. It would probably be more accurate to consider them examples of

[18] "In a practical sense, in terms of behavior, this principle can be reduced to a sort of motto: 'I don't know—let's see.' That is to say, whenever one is confronted by a new situation one does not unhesitatingly respond to it in some way definitely decided upon in advance. It is rather as though one were to say, 'I don't know—let's see,' with a sensitiveness to any respects in which *this* situation might be different from previous ones, and with a readiness to make appropriate reactions accordingly.

"It is to be clearly recognized that such an approach to new situations does not involve indecisiveness. It does not represent failure to 'make up one's mind.' Rather it represents a method for making up one's mind without going off half-cocked. It provides a measure of insurance against the blunders we make in judging people by first impressions, in applying to individual woman drivers our attitude toward *the* woman driver, in condemning a person—or in committing ourselves to his support—on the basis of hearsay or on the basis of very brief acquaintance. We make such blunders by reacting to the individual not as though he were an individual, different and variable, but as though he were merely a member of a type and the same as all other members of that type—and then we react inappropriately because we are so very sure of our opinion of the type" (14, pp. 187–188).

mild psychopathology, or at least something very close to it. When important enough problems are involved, they are primarily responses to an unstructured situation, which has no fixed frame of reference, by over-anxious, over-conventionalized or over-lazy people (people without an opinion of their own, people who do not know what their opinion is, people who mistrust their own opinions).[19]

It would seem that a fairly large proportion of the conclusions and problem 'solutions' which we come to in the most basic areas of life seem to be of this sort, in which, while we 'think,' we look out of the corner of our eyes to see what conclusion the other people are coming to so that we can also come to it. Obviously such conclusions are not thoughts in the truest sense of the word, *i.e.*, dictated by the nature of the problem, but rather stereotyped conclusions picked up whole from other people whom we trust more than ourselves.

As might be expected, such a position has certain implications for helping us to understand why education in this country falls so far short of its goals. We shall stress only one point here, namely, that education makes little effort to teach the individual to examine reality directly and freshly. Rather it gives him a complete set of pre-fabricated spectacles with which to look at the world in every aspect, *e.g.*, what to believe, what to like, what to approve of, what to feel guilty about. Rarely is each person's individuality made much of, rarely is he encouraged to be bold enough to see reality in his own style, or to be iconoclastic or 'different.' Proof for the contention of stereotyping in higher education can be obtained in practically any college catalogue in which all of shifting, ineffable and mysterious reality is neatly divided into three credit slices which, by some miraculous coincidence, are exactly sixteen weeks long, and which fall apart neatly into completely independent departments.[20] If ever there was a perfect example of a set of rubrics imposed *upon* reality rather than *by* reality, this is it.

This is all obvious enough but what is less obvious is what to do about it. One idea strongly suggested by an examination of rubricized thinking is a decreased absorption with rubrics and an increased concern with fresh experiences, with concrete and particular realities. On this point we cannot improve on Whitehead's statements. "My own criticism of our traditional educational methods is that they are far too much occupied with intellectual analysis, and with the acquirement of formularized information. What I mean is, that we neglect to strengthen habits of concrete appreciation of the individual facts in their full interplay of emergent values, and that we merely emphasize abstract formulations which ignore this aspect of the interplay of diverse values" (25, p. 284). "At present our education combines a thorough study of a few abstractions, with a slighter study of a larger number of abstractions. We are too exclusively bookish in our scholastic routine. The general training should aim at eliciting our concrete apprehensions, and should satisfy the itch

[19] An excellent discussion of the dynamics of the situation is found in Fromm (7). This same theme is also discussed in novel form in *The Fountainhead*, by Ayn Rand (21). In this connection *1066 and All That* (27) is both funny and instructive.

[20] "Science is taught as something fixed and stable, not as a system of knowledge whose life and value depends on its mobility and readiness to revise at a moment's notice its most cherished constructions when new facts or a new point of view suggest the possibility of alternative ones" (26, p. 58).

> "I am Master of this College;
> And what I know not,
> Is not knowledge" (25, p. 59).

of youth to be doing something. There should be some analysis even here, but only just enough to illustrate the ways of thinking in diverse spheres. In the Garden of Eden Adam saw the animals before he named them: in the traditional system, children named the animals before they saw them" (25, p. 285). "This professional training can only touch one side of education. Its centre of gravity lies in the intellect, and its chief tool is the printed book. The centre of gravity of the other side of training should lie in intuition without an analytical divorce from the total environment. Its object is immediate apprehension with the minimum of eviscerating analysis. The type of generality, which above all is wanted, is the appreciation of variety of value" (25, p. 286).

STEREOTYPING AND THEORIZING

It is by now generally accepted that theory building necessarily implies selection and rejection, which in turn means that a theory must be expected to make some aspects of the world *more* clear and other aspects *less* clear. One characteristic of most theories is that they are sets of rubrics or classes. But no one has ever devised a set of rubrics into which *all* phenomena fit easily; there are always some left out, some that fall in between the rubrics, and some that seem to belong simultaneously in various rubrics.

Furthermore, a theory is almost always abstractive, that is to say, it emphasizes certain qualities of phenomena as more important than others or at least more worthy of notice. Thus any theory, or any other abstraction for that matter, is apt to derogate or overlook some of the qualities of phenomena. Because of these principles of rejection and selection any theory must be expected to give no more than a partial, pragmatically biased view of the world. It is probably true, also, that all theories combined never give a full view of phenomena and of the world. The full subjective richness of an experience seems to come more often to artistically and emotionally sensitive people than to theorizers and intellectuals. It may even be that the so-called 'mystic experience' is the perfect and extreme expression of this sort of full appreciation of *all* the characteristics of the particular phenomenon.

These considerations should by contrast show up another characteristic of particularized experience, namely, its non-abstractive character. This is not the same as saying it is 'concrete' in Goldstein's sense (8). The brain-injured patient, when he behaves concretely, is actually *not* seeing all the sensuous characteristics of an object or experience. He sees and is able to see only one such characteristic, that determined by the particular context, *e.g.*, a bottle of wine is *just* that and nothing else, not, for instance, a weapon, or a decoration, or a paperweight, or a fire extinguisher. If we define 'abstracting' as selective attention, for any of various reasons, to some rather than others of the numberless characteristics of an event, then Goldstein's patients might actually be said to be abstracting.

There is then a certain contrast between classifying experiences and appreciating them, between using them and enjoying them, between cognizing them in one way and cognizing them in another way. All writers on the mystic and religious experiences have emphasized this as few technical psychologists have. For instance, Aldous Huxley says: "As the individual grows up, his knowledge becomes more conceptual and systematic in form, and its factual, utilitarian content is enormously increased. But these gains are offset by a certain deterioration in the quality of

immediate apprehension, a blunting and a loss of intuitive power" [21] (11, p. vii).

However, since 'appreciation' is certainly not our only relationship with nature, being in fact the least pressing biologically of all such relationships, we must not maneuver ourselves into the foolish position of stigmatizing theories and abstractions because of their dangers. Their advantages are great and obvious, especially from the point of view of communication and of practical manipulation of the world. If it were our function to make recommendations, we should probably phrase it in some such fashion as this: The ordinary cognitive processes of the working intellectual, the scientist, etc. can be made even more powerful than they are if it be remembered that these processes are not the only possible weapons in the armory of the researcher. There are others as well. If they have ordinarily been relegated to the poet and the artist, this is because it was not understood that these neglected styles of cognition gave access to that portion of the real world which is hidden from the exclusively abstracting intellectual.

LANGUAGE AND NAMING

Language is primarily an excellent means of experiencing and communicating 'nomothetic' information, *i.e.*, rubricizing. Of course, it attempts also to define and communicate the idiosyncratic, but for all theoretical purposes, it fails.[22] All it can do with the idiosyncratic is to give it a name, which after all does not describe it or communicate it, but only labels it. The only way to know the idiosyncratic fully is to experience it fully and to experience it oneself. Even 'naming' the experience may screen it off from further appreciation, as one professor discovered when walking down a country road with his artist wife. Upon seeing some lovely flower for the first time, he asked its name. He was thereupon scolded by his wife. "What good does the name do you? When you learn its

[21] For references on mysticism, see Aldous Huxley's *The Perennial Philosophy* (11), Sheldon Cheney's *Men Who Have Walked with God,* and William James' *The Varieties of Religious Experience* (13).

[22] For instance, see the writing of James Joyce or various contemporary discussions of the theory of poetry. Poetry is an attempt to communicate, or at least express, an idiosyncratic experience which most people 'have no art to say.' It is a putting into words of emotional experiences which are in essence wordless. It is an attempt to describe a fresh and unique experience with schematizing labels which are themselves neither fresh nor unique. About all the poet can do in such a hopeless situation is to use these words to make parallels, figures of speech, new word patterns, etc., with which, though he cannot describe the experience itself, he hopes to touch off a similar experience in the reader. That he sometimes succeeds is simply a miracle. If he attempts to make the words themselves unique, then communication is impaired as in James Joyce and as in modern non-representational art. An effective expression of these points is found in the following introduction to an unusual story:

"Why are we never prepared, why do all the books and all the wisdom of our friends avail us nothing in the final event? How many deathbed scenes we have read, how many stories of young love, of marital infidelity, of cherished ambition fulfilled or defeated. There is nothing that can happen to us that has not happened again and again, that we have not read over a thousand times, closely, carefully, accurately recorded; before we are fully launched on life, the story of the human heart has been opened for us again and again with all the patience and skill of the human mind. But the event, when it comes, is never anything like the description; it is strange, infinitely strange and new, and we stand helpless before it and realize that the words of another convey nothing, nothing.

"And still we cannot believe that personal life is, in its essence, incommunicable. We, too, having lived the moment, are impelled to convey it, to speak the words so honest in intent, so false in the final effect" (17, p. 27).

name, you're satisfied and don't bother enjoying the flower anymore." [23]

To the extent that language forces experience into rubrics, it is a screen between reality and the human being. In a word, we pay for its benefits. Therefore, while using language, as we must of necessity, we should be aware of its shortcomings and we should try to get around them.[24]

[23] "This is to be seen with unusual clearness in what I have called *evaluative labeling*. This term is designed to emphasize our common tendency to evaluate individuals and situations according to the names we apply to them. After all, this is a way of saying that the way in which we classify something determines in large measure the way in which we react to it. We classify largely by naming. Having named something, we tend to evaluate it and so to react to it in terms of the name we have given it. We learn in our culture to evaluate names, or labels, or words, quite independently of the actualities to which they might be applied" (14, p. 261).

". . . consider the differences in social status and self esteem that exist between two sets of public servants who perform similar menial tasks, 'airline *hostesses*' and 'Pullman *porters*'" (9, p. 355). See also (27).

[24] One suggestion would be that the scientist learn to respect the poet, at least the great poet. The scientist usually thinks of his own language as being exact and of other languages as being inexact, but often the poet's language is paradoxically, if not more exact, at any rate more true. Sometimes it is even more exact. For instance, it is possible to say, if one is talented enough, in a very condensed way what the intellectual professor needs ten pages to say. The following story, attributed to Lincoln Steffens (2, p. 222), illustrates this point:

"'Satan and I,' said Steffens, 'were walking down Fifth Avenue together when we saw a man stop suddenly and pick a piece of Truth out of the air—right out of the air—a piece of living Truth.'

"'Did you see that?' I asked Satan.

"'Doesn't it worry you? Don't you know that it is enough to destroy you?'

"'Yes, but I am not worried. I'll tell you why. It is a beautiful living thing now, but the man will first name it, then he will organize it, and by that time it will be dead. If he would let it live, and live it, it would destroy me. I'm not worried.'"

If all this is true for language at its theoretical best, then the situation must be far worse when language gives up altogether the struggle to be idiosyncratic, and degenerates completely into the use of stereotypes, platitudes, mottoes, slogans, clichés, battle cries, and epithets. It is then very obviously and frankly a means for obviating thought, for dulling the perceptions, stunting mental growth, and stultifying the human being.

One other characteristic of language which helps to make trouble is that it is outside of space-time—or at least particular words may be. The word 'England' over a period of 1000 years does not grow, age, develop, evolve, or change as the nation itself does. And yet such words as this are all we have to describe event in space-time. What does it mean to say, "There will always be an England"? As Johnson has it, "The moving finger of actuality writes faster than the tongue can herald. The structure of language is less fluid than the structure of reality. Just as the thunder we hear is no longer sounding, so the reality we speak about exists no more" (14, p. 119).

BIBLIOGRAPHY

1. ALLPORT, G. W. *Personality*. New York: Holt, 1937.
2. BAKER, R. S. *American chronicle*. New York: Scribner, 1945.
3. BARTLETT, F. C. *Remembering*. Cambridge: Cambridge Univ. Press, 1932.
4. BERGSON, H. *Creative evolution*. New York: Modern Library, 1944.
5. CROOKSHANK, F. G. The importance of a theory of signs and a critique of language in the study of medicine. In C. K. Ogden & I. A. Richards, *The meaning of meaning*. New York: Harcourt, Brace, 1938, Supplement II.
6. FREUD, S. *Collected papers*. London: Hogarth Press, 1924, vol. ii.
7. FROMM, E. *Escape from freedom*. New York: Farrar & Rinehart, 1941.
8. GOLDSTEIN, K. *The organism*. New York: American Book Co., 1939.

9. HAYAKAWA, S. I. The meaning of semantics. *New Republic*, 1939, **99**, 354–357.
10. ——. *Language in action.* New York: Harcourt, Brace, 1942.
11. HUXLEY, A. *The perennial philosophy.* New York: Harper, 1944.
12. JAMES, W. *The principles of psychology.* New York: Holt, 1890.
13. ——. *The varieties of religious experience.* New York: Modern Library, 1943.
14. JOHNSON, W. *People in quandaries.* New York: Harper, 1946.
15. KATONA, G. *Organizing and memorizing.* New York: Columbia Univ. Press, 1940.
16. LEWIN, K. *Dynamic theory of personality.* New York: McGraw-Hill, 1935.
17. LINCOLN, V. Down in the reeds by the river. *New Yorker*, Sept. 28, 1946, 27–31.
18. LUCHINS, A. Mechanization in problem solving: The effect of *Einstellung*. *Psychol. Monogr.*, 1942, **54**, No. 6.
19. MASLOW, A. H. The influence of familiarization on preference. *J. exp. Psychol.*, 1937, **21**, 162–179.
20. ——. Dynamics of personality organization, I & II. PSYCHOL. REV., 1943, **50**, 514–539, 541–558.
21. RAND, A. *The fountainhead.* Indianapolis: Bobbs-Merrill, 1943.
22. WERTHEIMER, M. *Productive thinking.* New York: Harper, 1945.
23. WHITEHEAD, A. N. *The concept of nature.* Cambridge: Cambridge Univ. Press, 1920.
24. ——. *Science and the modern world.* New York: Macmillan, 1925.
25. ——. *Modes of thought.* New York: Macmillan, 1938.
26. WOODGER, J. *Biological principles.* New York: Harcourt, Brace, 1929.
27. YEATMAN, R. J., & SELLAR, W. C. *1066 and all that.* New York: Dutton, 1931.

FREE–WILL AS A FUNCTION OF DIVERGENCE

BY IVAN D. LONDON

Contemporary psychologists are in agreement that there can be no place in science for any concept of free-will in the classical sense of a direct agent. Yet free-will appears as a universal datum of experience even though its admission into respectable theory remains taboo. The question of free-will, however, is not to be solved by ignoring it, as is the present fashion, or by banishing it to the realm of metaphysics. In this paper it is our intention to explore the possibility of a tenable re-introduction of free-will as a *scientific* conception into psychology.

In an examination of the problem of free-will the contributions of three sources are utilized both explicitly and implicitly: (1) quantum physics with its fundamental rejection of determinism and its concurrent demonstration that 'law' is merely the result of an averaging-out process, a process termed 'convergence' by Langmuir and implied in 'Bohr's principle' of complementarity (1, p. 290; 12; 15, pp. 170–171); (2) the methodology of modern physics which frankly views its data and theories on an 'as-if' basis, that is to say, in terms of models of one kind or other; (3) that modern theory of evolution which, taking into account the phenomenon of mutation, may be called Neo-Darwinism.

The germ of the present discussion appeared as an incidental by-product of a discussion of certain consequences, to be anticipated for psychology, of Langmuir's twin concepts of convergence and divergence [1] (15, p. 181). In that paper it was argued that free-will was to be accepted as a convenient neutral term (6, pp. 37–38). Under no circumstances is this stand to be confused with the classical position of the free-will advocates which makes of free-will an agent. All that, in effect, was affirmed was that free-will, as a function of divergence, acts *as if* it were an agent, just as convergence makes indeterminacy act *as if* determinism prevails, and, hence, for practical purposes is not to be denied.

Whether or not we are prepared to accept to the full the implications of indeterminacy, man is so constituted that he acts *as if* he were a free agent. If this were a world governed by a rigid determinism, we would, nevertheless, find him taking advantage of its laws for his own benefit; since, as soon as he understood their workings, he would be sure to find a way of either using or circumventing them. On the other hand, if this were a world given over to utter chance, we would still find him seizing all the favoring accidents that accrued his way and concentrating them to his own eventual advantage. Man is bound to neither necessity nor chance.

This view found supplementary expression in the paper mentioned above as follows:

". . . , the divergence of psychological events must lend confidence to the feeling that the individual is not quite subservient to the years that went before, nor is he the invariable expression of his childhood down to the last detail; that in a certain sense his future always represents a semi-break with his past, 'lawful' continuity being maintained by the converging aspects of those events for which he was both machine and repository; that a man, by taking advantage of the appearance of favoring divergencies, within and without,

[1] Divergence refers essentially to the impossibility *in principle* of setting up or discerning *prognosticating* rational schemes or patterns for certain sequences of phenomena. Convergence refers to those situations where, contrariwise, this is possible.

can help fashion his own future and semi-direct his fate. For so doing, every moment presents its opportunity and renders him his own circumscribed free-agent.

"According to this view, then, free-will may be looked upon as a function of divergence, operating within the limits imposed by the internally and externally convergent. Free-will is a term assignable to the feeling of latitude of choice that attends acts divergently characterized. It may be protested that this is a pseudo-freedom, an illusion. But, in view of the fact that the very divergence of acts seemingly covered by free-will makes any test of free-will impossible, this objection is pointless, for divergence forbids the possibility of resetting those conditions which obtained prior to the exercise of 'free-choice,' in order to demonstrate either free-will or its illusion. It becomes a matter of personal predilection, whether one chooses to become excited one way or the other over the question. Free-will is merely a token of the divergence of events and as a convenient neutral term admissible to language" [2] (15, p. 181).

The contemplation of design without a designer, of purpose without a purposer, of will without a willer, may seem intolerable and a crass contradiction in itself. Before, however, we join in condemnation, let us consider that the following, despite verbal inconsistencies owing to the limitations of ordinary language, do in effect happen: (1) that convergence gives the appearance of order to disorder; (2) that organic evolution has been able to advance without internal or external guidance, yet with all the appurtenances of purpose, through mere selection on random mutations.

As a matter of fact, the second example is most germane to our present discussion. It will be worth our while to consider it in some detail, for the problem posed by it is *fundamentally* analogous to the one that confronts us in considering divergence as it affects the individual who seems to be able to extract order out of disorder and impart purpose to a universe without purpose.

In the study of the evolution of organisms the divergencies which are encountered are termed technically for biology *mutations*, the belief that evolution proceeds owing to some internal necessity to vary continuously in a particular direction *orthogenesis*. The Neo-Darwinism of today employs, as in classical Darwinism, the mechanism of natural selection, but it operates by a sifting action among competing mutants and not, as in classical Darwinism, on supposedly inherited variations as such. Further, it manages without acknowledgment of any directing compulsions or orthogenesis (9, p. 54).

The critics of both neo- and pure Darwinism acknowledge that small changes and elaborations in organisms are, on the basis of these theories, indeed possible, but profess to find difficulty in understanding how, through them, large and complex transformations and adjustments are possible of a type involved in complicated co-adaptations as found in the eye, in the development of new organs like a wing, or in the attainment of a new way of life, as in the emergence of land vertebrates from fish living in another environmental milieu (2, 23).

The difficulty of conceding the probability of these developments on the basis of a natural selection operating on random mutations, good, bad, and indifferent, disappears when the evidence of both theory and laboratory is taken into account; for, paraphrasing R. A. Fisher, it turns out that natural selection is a mechanism that generates probability of a very high order out of

[2] The sense of individual continuity in a changing world, no doubt, also helps to generate in us the feeling of independence from it, and, thus, to reinforce the sense of freedom which is the universal experience of man.

material seemingly most unpromising. Both the mathematical theory of selection and artificial selection, as practiced by man, prove this beyond all doubt (4, 7, 9, 13).

It has, for instance, been calculated that, if a given mutant gene conferred an advantage of only one per cent to an organism, that is to say, if an organism bearing one such mutant gene has an expectation of reproducing itself which is only one per cent higher than those without the mutant gene, then that mutant gene can establish itself in half the organisms of the species, which they constitute, in a period of only about 100 generations. Knowing the amount and type of mutations available as raw material for selection and the various methods by which the latter can operate on them, we may justly entertain the strongest belief in the efficacy of Neo-Darwinism to account for the extraordinarily varied developments and long-range adjustments characteristic of the different organisms inhabiting this world (9, pp. 56, 412; 7, pp. 190–213).

Natural selection, then, is the agency which gradually accumulates and combines for novel perpetuation the divergencies (mutations) which come its random way. It is even capable of accounting for the consistency of trends, since it has been shown that, once adaptive specialization has begun in one direction, it must, on the basis of the known facts of mutation, become progressively harder for selection to switch the trend elsewhere (9, p. 523).

The purposiveness discerned in both the structure and function of an organism is, then, one that, though real enough in effect, is only apparent and comes about without the intervention of a purposer in the guise of either the organism itself or some outside power. One may well say with Huxley that purpose is almost an accidental by-product of that "process by which the utilization of the earth's resources by living matter is rendered progressively more efficient" (9, p. 387) and, further, that "purposes in life are made, not found" (9, p. 576).

It seems evident that the analogy suggested between the effects of divergence on the development of the *species*, on the one hand, and, on the other hand, the effects of divergence on the development of the *individual* is one that is fundamental and pregnant of possibility. Divergencies are the rule in both. Their suppression, retention, and reinforcement in the evolution of species are mediated through the varied operations of a process now very well understood—natural selection. The result is orthogenetic only in effect: design without a designer, purpose without a purposer.

The suppression, retention, and reinforcement of divergencies in the development of the individual, however, is a problem that still awaits a general solution. We do not quite know how or what selective mechanism operates on them. We perhaps have partial answers in those psychological theories of learning and conditioning which acknowledge the importance of the random movement and random response, but much work remains to be done before we can say, taking account of the reality of divergence, that we understand the development of the individual as well as the biologist understands the evolution of the species.

However, on the basis of the fundamental analogy that we have drawn we now have additional reason to feel safe in asserting (1) that both the continuities and discontinuities, apparent in any individual's development, are deducible from divergencies variously acted upon within and without the individual; (2) that, in consequence, some aspects of the human personality are to be understood on the basis of trends

set up and hence can be subjected *in form* to a deterministic reduction, but (3) that other aspects have no motivating antecedents prior to their origination and defy reduction to any truly deterministic formula; (4) that, as a result, the appearance in man of behavior, seemingly motivated by a will which acts *as if* it were free, is a reality and *is* free in the sense that divergence gives him the continual chance to modify and even to break away from the broad convergencies that mark and give consistency to his life; and (5) that the appearance of free-will and its admission as a convenient neutral term into theory has no bearing on the question as to whether or not there is a willer; we are only permitted to say that free-will, as a function of divergence, implies none.

A natural retort from those who feel compelled to continue the espousal of an unmitigated determinism will, of course, be that hypnotism, compulsions, the effects of various drugs, etc. discredit *ab initio* the attempt to introduce indeterminacy and associated concepts of free-will into psychological thinking. An uncomfortable feeling seems to persist that the admission of indeterminism into respectable psychological theory must be accompanied by a reintroduction of the old discarded notions of free-will as formerly understood. This does not at all follow.

To admit the possibility of new intrusions, that is, to aver that the present is not completely determinable in terms of antecedent conditions (24), is not the same thing as asserting free-will in the sense of an agent, because then free-will would imply determination of another sort—absolute personal determination. This is the very thing we wish to avoid. To admit indeterminism is not to admit a freely functioning free-will in the classic sense, but to assert the likelihood of free-will *as a function of divergence* which, although not operating as an agent, nevertheless produces effects *as if* it were. It is for this reason that its admissibility to theory as a convenient neutral and handy term was argued for.

Free-will, as a function of divergence, is not something that man arrives at as his natural prerogative, but something which must be acquired, and once acquired may again be lost, for free-will, as a circumscribed 'free-agent,' by the proper continuing concentration of either favorable or unfavorable divergencies, can push back, hold stationary, or shrink in the bounds of circumscription in which free action may take place. Free-will, as a function of divergence, thereby provides man with not only the appearance, but the reality of increasing control over his social environment, and concurrently greater independence from it.

The appearance of the equivalent of direct will in the classic sense is, from the above point of view, most unlikely, as it would imply divergencies so sharp and so frequent as to override *continually* all selective influences. This is a most improbable contingency and one which the ordinary observations of daily life categorically deny.

Since the person is embedded in nature, he cannot be a law unto himself. But without divergence, the antinomy of 'natural determination' and 'personal freedom' cannot be reconciled. With divergence it disappears, each horn of our dilemma turning out to be only an apparently contradictory projection of the same phenomena: divergence and its mitigating summation in varying degrees through convergence.

When hypnosis, compulsions, certain drugged states, etc. are cited to disprove free-will in general, what is it that these instances really prove? Namely this, that here are instances in which free-will does not function and nothing more.

As a matter of fact, we actually define some mental states (*e.g.*, compulsions) as abnormal simply on the basis of a lack of apparent free-will—a roundabout acknowledgment of the *phenomenal* reality of free-will. To conclude further that these instances disbar any further consideration of the possibility of the existence of an indeterminism and an associated free-will as a function of it is to indulge in that very convenient methodological weakness which allows a few specialized abnormal instances of behavior to be the criterion for all behavior—a species of weakness assiduously cultivated by some of us who, for instance, are wont to ascribe to all people characteristics discerned in a few abnormal individuals.

Hypnosis, compulsions, etc. provide instances where behavior has become sharply convergent and in no wise negate the possible rôle of free-will in divergent phenomena. It seems somewhat ingenuous for us to define free-will *a priori* as an agent and then summarily to reject it as a concept alien to our style of thinking. Rather it would seem that our task, as investigators, should be to proceed inductively in order to discern whether we may or may not find evidence of processes which can legitimately be characterized as *in effect* free-will, and then to adjust our criterion accordingly. Free-will may just as well prove to be partial as universal. It goes without saying that human experience encourages just this conception. The fact that the lack of free-will can be demonstrated for some processes does not preclude its existence in others.

The conception of free-will as a function of divergence is one that is harmonizing, since it allows and accounts for both the appearance of free-will and its apparent lack. The processes by which the divergencies of behavior are selected for reinforcement and perpetuation in the individual, of course, still await the investigator. We simply confess here the reality of the observation that they do accrue in one direction *as if*[3] so directed by a purposeful agent, an effect which we are conveniently dubbing 'free-will' and whose appearance we cannot ignore. Free-will is a datum of experience to be given its due regard in psychological theory—a demand which flows as a natural corollary from our more general proposition that divergent man is not necessarily prisoner to any inexorable logic of history or inner logic of development projected into him by some retrospecting determinist (15).

The concept of the *as if* as here implied eschews the crypto-determinism which characterizes the *as if* of the determinists and which is well illustrated by Koestler when he observes,

> "Thus my disbelief in determinism must be contained in the set of factors which determine my behavior; one of the conditions for fulfilling the prearranged pattern is that I should not believe that it is prearranged. Destiny can only have its way by forcing me to disbelieve in it. Thus the very concept of determinism implies a split between thinking and doing; it condemns man to live in a world where the rules of conduct are based on *As If's* and the rules of logic on *Becauses*" (10).

Free-will is here a mere façade cloaking the domination of deterministic factors. This is not the free-will which we have defined as a function of divergence.

[3] It is well to remind ourselves again that we are permitted validly to speak in terms of 'as if,' provided there are no distinguishable differences involved for the delimited occasion we have in mind. For instance, the gravitational attraction between two homogeneous spheres can be calculated *as if* the masses of the spheres were considered as concentrated in their respective centers (8, pp. 5, 17: Ex. 2), which certainly is not the case; or, we speak of the *rising* and *setting* of the sun, when we know it is an *as if* phenomenon to which we are referring.

Is it, after all is said and done, important that free-will, even as a function of divergence, be acknowledged as a tenable conception and admitted once more to respectability? The answer is an unqualified *yes*, because in the atomic age which confronts us we can no longer afford to tolerate any unnatural schism between the science of living and its practical execution for aspirant man who, though half-locked in obdurate convergence, still is through liberating divergence made half free and a comaneuverer of his fate.

And so we attain to the view of man divergent within convergence—half free in a seemingly *non*-rationally evolving world.[4] Man can be the supreme artist of life. But like any artist he must adapt his art to the limitations of his medium. The sculptor takes cognizance of the stone on which he works; the painter his oils. Man, as his own architect, then builds, recognizing that he is not totally free and admitting the constraints imposed by life's convergencies; but, recognizing that he is not totally 'law'-bound, he, contrariwise, manages to change divergent-wise the very medium with which he must work—himself. And, not quite knowing how and in what direction he can change and these being, to boot, *in principle* irreducible to predictive formulations, divergent man proclaims himself one whose will is free and whose fate he can control and contrive.

And it is this belief and faith which fortifies man in his trials and which makes life for him meaningful and worthwhile. Man, in affirming or denying these things, is inevitably thereby pitched into a *Weltanschauung* and becomes a willing prisoner of it. Any system of psychology, which aims to include all that is man and which at the same time thinks it eschews amalgamation with some philosophy of life, is wanting and becomes unawares a perverter and misdirector of life, because it cannot help but be a program of action and, hence, a way of living.[5] An all-inclusive psychology must be an amalgam of science and a philosophy of life; must be not only man's analyzer, but also his director.

Toward this end it is necessary to acknowledge individual and collective man as, in some way and within certain limits, free to mold his destiny. There will be many who will continue to find the notion of free-will repugnant to their scientific sensibilities due to the metaphysics with which it has been traditionally associated. Perhaps the conception of free-will as a function of divergence will render its acceptance into psychology somewhat less unpalatable.

BIBLIOGRAPHY

1. BOHR, N. Causality and complementarity. *Phil. Sci.*, 1937, 4, 289–298.
2. CUÉNOT, L. C. M. J. *L'adaptation.* Paris: Doin, 1925. Pp. 407.
3. DU NOUY, L. *Human destiny.* New York: Longmans, Green, 1947. Pp. 289.
4. HALDANE, J. B. S. *New paths in genetics.* New York: Harper, 1942. Pp. 206.
5. ——. A new theory of the past. *Amer. Scient.*, 1945, 33, 129–145.
6. HEMPEL, C. G. Analyse logique de la psychologie. *Rev. Synthèse*, 1935, 10, 27–42.
7. HOGBEN, L. *Introduction to mathematical genetics.* New York: Norton, 1946. Pp. 260.
8. HOUSTON, R. A. *An introduction to mathematical physics.* London: Longmans, Green, 1929. Pp. 199.

[4] This is not to be construed as leading to the triumph of the irrational over the rational. It implies merely the importance of recognizing the very great role of the *non*-rational in life and living.

[5] This view is also strongly adumbrated, if not actually affirmed, by the Russian psychologist, Rubinshteĭn, who insists that the entities of psychology must not be cut off from life both in their construction and operation (17, 18, 19, 20, 21).

9. HUXLEY, J. *Evolution: the modern synthesis.* New York: Harper, 1942. Pp. 645.
10. KOESTLER, A. *The yogi and the commissar.* New York: Macmillan, 1946. Pp. 247.
11. LANGMUIR, I. Science as a guide in life. *Gen. Elec. Rev.*, 1934, **37**, 312–317.
12. ——. Science, common sense, and decency. *Science*, 1943, **97**, 1–7.
13. L'HÉRITER, P. Génétique et évolution. Analyse de quelques études mathématiques sur la sélection naturelle. *Coll. Actualités Scientifiques et Industrielles.* No. 158. Paris: Hermann, 1934. Pp. 44.
14. LONDON, I. D. Psychology and Heisenberg's principle of indeterminacy. PSYCHOL. REV., 1945, **52**, 162–168.
15. ——. Some consequences for history and psychology of Langmuir's concept of convergence and divergence of phenomena. PSYCHOL. REV., 1946, **53**, 170–188.
16. LOEB, L. *The biological basis of individuality.* Springfield: Thomas, 1945. Pp. 711.
17. RUBINSHTEĬN, S. L. Consciousness in the light of dialectical materialism (Trans. by N. J. Nelson). In *Science and Society*, 1946, **10**, 252–261.
18. ——. *Osnovy obshcheĭ psikhologii.* Moscow: State Pedagogic Publ. House, 1940. Pp. 596.
19. ——. Problema soznaniîa v svete dialekticheskogo materializma. *Izvestiîa Akademii Nauk S.S.S.R., Seriîa Istorii i Filosofii*, 1945, **2**, 3, 148–157.
20. ——. Psikhologischeskaîa nauka i delo vospitaniîa. *Sovetskaîa Pedagogika*, 1945, **9**, No. 7, 35–40.
21. ——. Psikhologiîa i pedagogika. *Sovetskaîa Pedagogika*, 1941, **5**, No. 7–8, 41–47.
22. VAIHINGER, H. *Die Philosophie des Als Ob.* Berlin: Reuther & Richard, 1911. Pp. 804.
23. VIALLETON, L. *L'origine des êtres vivants et l'illusion transformiste.* Paris: Plon, 1929. Pp. 388.
24. WHITTAKER, E. T. Chance, freewill and necessity in the scientific conception of the universe. *Proc. Phys. Soc. London*, 1943, **55**, 459–471.

CONCEPTS AND METHODS IN THE MEASUREMENT OF GROUP SYNTALITY

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I. First Things First in Social Psychology

Now that social psychology has recognized its major concern to be the psychology of groups—in relation to one another and to individuals—the time is ripe to discuss research methods and concepts for arriving at *the description of group behavior.*

It is to be hoped that history will not repeat itself by recapitulating in social psychology the unnecessarily wayward and wasteful course of individual psychology. The development of an exact science of prediction in relation to individual personality required, as in other biological sciences, the prior provision of accurate description, measurement and classification of phenomena. Actually amateur speculation and incontinent 'explanation,' remote from actualities of measurement or observation, ran riot and sadly delayed progress by deflecting the attention of researchers, until recent years, from the basic and unescapable discipline of a true science of personality measurement.

This contribution to social psychology begins, therefore, with the challenge that the solution of the vital practical and theoretical social problems now clamoring for attention requires scientific workers to restrain themselves from superficial 'research' until a correct foundation for the meaningful description and measurement of groups has been achieved. It then proceeds to propound concepts, methods and experiments for this foundation. It asserts, as a logical premise, that to arrive at laws governing the development and interaction of groups, we must first have some accurate means of defining a group at a given moment.

We have, in short, to establish a branch of psychology concerned with the 'personality' of groups. 'Establish' is used advisedly; for at present—in spite of much talk about 'culture patterns'—methods and concepts simply do not exist. The sociologists, recognizing that a group cannot be defined in merely political or economic terms, have turned to the psychologist for a science of the living group entity, but, for reasons evident in the following section, they have yet done so in vain. Mannheim (24), typical of sociologists disappointed in constructive synthesis by the psychologists' impotence, well says "The main reason for our failure in this branch of human studies is that up till now we have had no historical or sociological psychology."

II. The Dimensions of Syntality

By 'personality,' in the individual, we mean "that which will predict his behavior in any given, defined situation" (8). Mathematically we take a pattern of indices which defines the personality and another set defining the situation, arriving therefrom at an estimate of the ensuing behavior. Psychologically we speak of the former—the personality indices—as a structure of traits—a set of more or less permanent 'readinesses,' which function behaviorally under the impact of a stimulus situation.

For the corresponding structure in the group an unambiguous term is needed. Examination of many possible verbal

roots indicates *syntality* as best indicating the 'togetherness' of the group, while having sufficient suggestive parallelism to 'personality' and 'totality.' Further, we may perhaps speak appropriately of the syntality of a group as inferred from the 'synaction' of its members—the group action as defined below. Syntality covers dynamic, temperamental and ability traits of the group.[1]

The measurement of syntality can profit greatly from the technical advances gained in the measurement of personality. The early failures of personality study mentioned above came not only from an attempt to abort the descriptive phase of psychology, but from an inability, once the necessity of description was admitted, to find any better foundation for measurement than the numberless shifting sands of arbitrary 'traits' in poorly designed *ad hoc* 'tests.' All that has been altered, by the original work of Spearman, Burt (5), Thurstone (35) and many others, which made the concept of the unitary trait meaningful. Although this work has yet scarcely affected applied psychology it has, in the last fifteen years, delivered psychology already from a confused impasse. It first enlightened the measuring of abilities, and later, by the work of Guilford, Mosier, Reyburn and others on questionnaire response and the present writer's analyses of surface and source traits, was carried to those unitary traits of temperamental and dynamic nature which could complete the description of personality.

[1] Apparently the only other use of syntality, a specialized and remote one, is in C. Morris's *Signs, Language and Behavior*, New York: Prentice Hall, 1946. The derived term, synergy, employed below, has been used (apart from its physiological use) in sociology by Lester Ward (37) but again in a far wider and less technical, defined sense than here. These contexts are so remote that no danger of confusion arises.

It is easy to see now that if factorial methods had been applied from the beginning to the description and measurement of personality, using R-technique for common traits and P-technique (8) for unique traits, a true perspective of the important dimensions would have been obtained much earlier than by the hit-or-miss methods of clinical 'intuition.' The measurement of abilities, for example, would have been saved many a discouraging, profitless circuit of 'philosophical' debate as to the nature of various abilities, as well as many acrimonious, ineffectual arguments as to the criteria against which measures should be validated. The disillusionment of students with overburdened lists of personality 'types'—each peculiar to the university at which he happened to be studying—would also have been avoided.

Social psychology now stands where the study of individual personality then stood. In effect psychologists have accumulated a few fragmentary aspects of group syntality from various isolated studies. They have chanced upon 'morale' (although the label probably covers such different variables as group persistence against difficulties and mean level of individual idealism), aggressiveness, authoritarian-democratic structure, isolationism, degree of freedom from internal dissension etc. Mostly these 'dimensions' of group behavior have been seized upon in response to the suggestion of some immediate practical problem, without regard to any over-all theory or to long-term scientific needs in social psychology. The slightest consideration of the whole natural history of groups would probably suggest more important variables than these for describing their total behavior.

An embarrassing harvest of muddle, moreover, is likely to be reaped if the application of large terms for small variables continues very long with re-

spect to the labelling of group traits. Is it fitting, for example, to describe experimental groups as Totalitarian or Democratic (in science as distinct from journalism) when no proof is offered that these are unitary patterns or when the variables actually measured are perhaps the least important for defining that total pattern, if it exists as a single pattern?

It would seem better to stick to modest, less interpretive, more contingent labels for more completely definable experimental variables, until the true patterns emerge and are confirmed.

Social psychology, therefore, now awaits its foundation of accurately described syntalities, alike at the level of culture patterns, of institutional groups and of small committees. That foundation can be achieved *by factor analysis of a 'population' of groups, on a suitably chosen collection of group behavior variables.* Our purpose here is not to present particular results but to examine the promise and the limitations of this novel application of factorization and discuss the conditions under which it is valid. Nevertheless, the discussion will be guided at least by certain rough and qualitative observations already possible on the first two studies now proceeding in the field, and to be reported elsewhere (11, 12). The first is a study of 60 nations, factorizing 40 variables by R-technique, checked by two small sample studies employing Q- and P-techniques (8, 11). The second (12) factorizes a rich variety of group performances from 25 groups of six people each, *i.e.*, of 'committee size.' For effective exploration with the new method requires that it be brought to bear on widely different group sizes and forms.

A general requirement of the method is that the variables shall be chosen with the utmost catholicity to cover all aspects of group behavior. The application of this principle to individual personality in the 'personality sphere' concept (8) has already rewarded us with factors which not only clarify long familiar, previously foggy, clinical syndromes, but also reveal important dimensions which were never conceptualized. By attention to this principle in the realm of social psychology we can expect similarly to discover those factors which will describe most of the differences of groups in terms of relatively few unitary traits or meaningful dimensions. They may turn out to be familiar dimensions such as morale, democratic organization, industrialization, etc. or may open our eyes to functionally new 'wholes' or dimensions of groups. Thereafter, by assigning measurements on these primary dimensions to any given culture pattern we can accurately define its syntality, as the necessay basis for developmental and causal studies.

III. The Factorizable Characteristics of Groups: Logical Analysis

As we concentrate on the choice of variables we run into certain problems of assortment which can perhaps be solved to a certain degree by armchair reflection. This and the following section constitute attempts thus to achieve the maximum clarity of experimental design and problem formulation, with the adoption of definite hypotheses.

Out of deference to majority opinion we ought perhaps to ask at the outset the supposedly devastating question whether such a thing as a group mentality exists at all. It is of historical if not of scientific importance that McDougall's penetrating pioneer analysis (25) of 'the group mind' was badly received by a certain section of American psychologists. In the descendants of this sectional opposition the allergic reaction to his expression is still so strong

as to paralyze thought, and writers who pander [2] to irrationality have for years operated with McDougall's concept by circumlocutions. The rejection was not due to opposition to Hegelianism, for McDougall's able philosophical preamble explicitly refuted Hegelian mysticism and accepted Hobhouse's searching anti-idealist criticisms. The probably correct, but more trivial explanation was that this contribution to social psychology was launched at an unfortunate moment. For a large number of callow students in psychology were unable at that time to recognize any manifestation of mind unless formally, or often actually, reduced to the twitching of a dog's hind leg. From the drouth of this sterile atomism they presently rushed, with undiminished lack of judgment, down a steep place into the sea of ineffable, unmeasurable—but far from inaudible—Gestalt.

Fortunately a steady nucleus of naturalistic observation and methodological constructiveness survived and developed, despite those local set-backs, and despite the disturbances from the clamorous medieval tournaments among the pseudo-philosophical 'isms' of psychology. Meanwhile the idea was further developed by Gurwitch (18) in sociology, and, in more vague terms, by Whitehead and by Roethlisberger in industrial psychology. Finally, the main line of development in pure psychology has given us better technical methods, notably factor analysis and its variants, for investigating behavioral wholes and dynamic patterns.

It could be argued that any study of total organisms, such as McDougall proposed, should have been postponed until new methods had been invented, but this is quite different from asserting (a) that reflexology is capable of explaining the behavior of organisms as such, or (b) that wholes do not exist. Of the difficulties of the social psychologist at that juncture McDougall wrote (25, p. x), ". . . to the obscure question of fact with which he deals, it is in the nature of things impossible to return answers supported by indisputable experimental proofs. In this field the evidence of an author's approximation towards truth can consist only in his success in gradually persuading competent opinion of the value of his views." His optimism about the existence of a large reservoir of competent opinion proved unjustified. But the vigor of prejudice has one virtue: that it forces the development of precision methods from the conclusions of which the prejudiced cannot escape.

McDougall himself, unfortunately, failed to develop the method here described, but many of his conclusions about group behavior are likely to prove correct, and his basic contention that it is rewarding to deal with groups as single entities remains the springboard whence we take off into new research fields. His arguments for treating the group as an organism or mind which have never been refuted, are set out below [3] together with certain new ob-

[2] To the objection that many psychologists misconceive the term one must reply as Freud did to Max Eastman's similar objection to the precisely defined notion of the Unconscious, "Cannot they correct their misconceptions?"

[3] The behavior of a group has more formal resemblance to the behavior of an individual organism than to any other natural entity, principally in the following respects:

(1) A group preserves characteristic behavior habits and structure despite the continual replacement of actual individuals.

(2) It shows memory for group experiences and learning.

(3) It is capable of responding as a whole to stimuli directed to its parts, *i.e.*, it tends to solve problems of individuals and sub-groups by group action.

(4) It possesses drives which become more or less integrated in executive functions of nutrition, acquisition, aggression, defence, etc. Groups vary in dynamic integration analo-

servations on the question. That some psychologists should ever have congratulated themselves on their 'realism' (rather than on mere concrete thinking and failure of abstraction) in rejecting the group as an organic entity, is still more surprising when one observes that hard-headed lawyers, politicians and statesmen deal operationally with groups *as* groups every day.

gously to the variation of individuals in character.

(5) It experiences 'moods' of expansiveness, depression, pugnacity, etc. which modify characteristic behavior and energy output as do emotional states in the individual.

(6) It shows collective deliberation, a process highly analogous to the trial-and-error thinking of the individual, when held up in a course of action. Similarly the act of collective volition, through legislatures and executives, is closely analogous to the resolution of conflicting dynamic demands in the individual.

A group also tends to exercise some choice on admission or rejection of those who aggregate towards it. This, like some few other basic characteristics of groups, has no analogy in the individual mind, except the remote one of selective learning and attention.

Against these it can be urged (1) that the grey matter or total nervous system is more dispersed than that associated with the single biological organism, and (2) that there is no group consciousness corresponding to individual consciousness. Both of these are doubtful objections, but in any case they are outside the realm of psychological observation. They *may* account for the systematic differences research will undoubtedly find between the 'group mind' and the individual mind; they do not jeopardize the aim of using the group as a behavioral unity and reference point in psychological research. A less bald outline of the theoretical arguments over the group mind has been set out by the present writer elsewhere (7). Extremely few 'experimental' (as distinct from historical) treatments of groups as unitary organisms yet exist to demonstrate the practicability of the hypothesis; but Thorndike's treatment of cities (34), showing them to have persistent characteristic traits, already offers some pragmatic proof. Characteristic (3) above—that all parts react adjustively (perhaps homeostatically) to stimuli affecting limited segments—will be taken as the primary definition of the group.

As to the behavior from which the group mentality is to be inferred, however, there runs alike through McDougall's and other psychologists' writings what we consider a rather serious confusion of characteristics. On grounds of logical analysis we suggest that there are *three* aspects or 'panels' to be taken into account in defining a group.

(1) *Syntality Traits* (Behavior of the group as a group). The group behavior recorded here concerns any effect the group has as a totality, upon other groups or its physical environment. Just as the individual may show more willed (conscious), and less organized (neurotic symptom, temperament) behavior, so the group behavior will range from action by (a) whatever organized will and executive agencies the group processes, to (b) less organized, uncontrolled elements and so to (c) unorganized mass action, expressing largely the average individual as under (3) below. For example, the sheer amount of food the group eats would be largely a function of this last kind.

A catalogue of syntality traits, analogous to the personality sphere, as advocated above, is not easy to obtain, since there is no dictionary as of personality traits. We have proceeded by (a) making an exhaustive study of the many incisive writings on group characteristics, *e.g.*, Benedict (1), Brogan (3), Cole (13), Keyserling (23), Mead (26), Siegfried (32) and Münsterberg (29), and of the characterizations found in history and (b) by using the *personality sphere* (8) as a guide to possibly important areas of behavior in syntality.

Most of these traits will be inferred from external behavior of the group, but the executive will of the group can manifest its properties also in *internal action, e.g.*, in deliberately changing internal organization, suppressing internal revolt. Examples of syntality traits

are: aggressiveness against groups (*e.g.*, acts of declaration of war), efficiency in exploitation of natural resources, isolationism, energy in trading, reliability in commitments, proneness to trade cycles or to revolutions.

(2) *Characteristics of Internal Structure.* These concern the *relationships among the members of the group.* The character of unification and of government is primary, and this may vary from a practically unstructured crowd through horde leadership and the incipient democratic leadership in Moreno's (27) vague "tele or the movement of feeling toward leader individuals" to a highly organized legislature and executive. Internal structure characters issue in syntality traits but they are not themselves the behavior of the group.

Examples of structural characters are: all sorts of indices expressing degree of heterogeneity in various characteristics, indices of class structure, pattern of institutions and organs such as church, army, family, modes of government and communication.

(3) *Population Traits.* These are mere aggregate values—definitions of the personality of the *average* (or typical, modal) member of the group. It is noticeable that in the literature of group characteristics the bulk of observations actually concern the typical member of the population rather than the group syntality.

Examples of population characteristics are: average intelligence, crime incidence, attitudes on moral and religious questions and all that is usually gathered by population polls.

The probable relationship among these three [4] panels is that if we knew all the laws of social psychology we could predict the first from the second and third. Alternatively, if we knew the third and the environment of the group we could predict the second, *i.e.*, the type of group structure which would emerge, and therefore, ultimately, the first, *i.e.*, the group behavior. This is no denial of the principle that the mind of the group is fashioned by individuals and in turn fashions the individual mind. In the extreme instance of the second where we are dealing with a practically unstructured crowd, the first and third become practically identical.

From the interim observations available in our experiments we can already generalize the hypothesis that the changes in syntality traits produced by changes in population traits will be qualitatively as well as quantitatively different from the latter. For example, an increment in average intelligence may change character-like qualities in the group, while a difference between groups in average emotional stability of the population may appear as a difference in the ability of the group *per se* to solve cognitive complexities. This we shall call the *theory of emergents* (or syntal emergents).

IV. SEVEN THEOREMS ON THE DYNAMICS OF SYNTALITY

The implicit conception of group which most people unconsciously adopt in such discussions as the above is of an aggregate composed of a number of individuals whose *whole existence* is bound up with the group. Real groups are rarely of this kind and for the most profitable application of the new method to general group investigation it be-

[4] It may be objected that we overlook a fourth ingredient in the definition of the group—namely the group tradition. It is true that this 'momentum' of the group is as important as its material existence and that groups of any maturity are composed of the dead as much as of the living. These traditions, however, exist in the minds of the living—the constitution of the United States, for example, would be ineffective if no one knew about it—and are adequately included in all three panels above.

hooves us first to analyze as far as possible what the situation is with regard to varieties of groups and the modifications of method required to cope with them. This analysis turns principally on the dynamic relations within and between groups, for temperamental and ability characters do not differ in any systematic way, as far as we can see, from those known in individuals.

Sociologists have written a good deal about group classification and, more tangentially, about dynamics, and we must first glance at the evolution of opinion among outstanding representatives. Gumplowicz in his classical treatment (16) outdistanced most of the psychologists of a generation later by conceiving that laws can be formed about the behavior of groups ("The behavior of collective entities is determined by natural laws") but failed to agree with the present integrative psychological position by maintaining somewhat unnecessarily that this behavior had no relation to "the motives and natural qualities of (constituent) individuals." Ross (30) proceeded to carry the study of groups into a classificatory system which included 'Fortuitous groups' (crowds), 'Natural groups' (families, clans), 'Interest groups' (states, confederacies, guilds), and also, but less happily, 'Likeness groups' (professions, classes) in which presumably nothing dynamic but only a logical bond might hold the members together. Gillin and Gillin (15) adopt a somewhat similar classification, but descriptively and without implying fundamental psychological differences. To the psychologist a merely logical classification is untenable. *Every* group is an interest group—in the sense that its existence arises from a dynamic need—or else it is not, in any psychological sense, a group. Sorokin and Zimmerman's (33) distinction between 'systems' and 'congeries' seems to be a statement of this issue in other terms.[5]

Even when sociologists, however, have recognized that a group exists only because and so long as it satisfies psychological needs, they have failed to appreciate the nature of the ergic (10) and the metanergic needs that are involved in its support. Hayes (20), Hart (19), Von Wiese (36) and others stress or dwell wholly upon security, as if small groups form, and then aggregate into larger groups, only under threat. This may be a common motive—indeed fear and gregariousness may account for practically all association in the lower animals. But in man, with his power of learning ways of long-circuited satisfaction, the whole gamut of primary ergs—hunger, escape, self assertion, curiosity, sex, gregariousness, etc.—may participate in group formation. The sheer fact of groups needing to have adequate dynamic basis, obvious though it may now be, needs emphasis at this juncture in social psychology because the extension of group experiment of the present kind brings the risk that, in the artificial situation of experiments, groups will be employed which are not created by a real purpose of the participants.

Beyond this fundamental character the psychologist has next to recognize the fact of *dynamic specialization*, a phenomenon tied up with the almost universal occurrence of overlapping groups. For the simplification of a first experimental approach we have chosen, as described above, self-contained groups: nations, which have relatively shadowy loyalties beyond themselves, and committee groups in a control

[5] The satisfaction of a need through the physical existence of the group is the basic definition of existence of a psychological group. The definition that a group exists when there is 'internal interaction' of individuals seems less fundamental to the present writer, and indeed derivative from the above primary condition.

'vacuum' situation in which no other loyalties of the members are brought into action or conflict. But the great majority of existing social groups, other than nations, are overlapping, in the sense that individuals belong simultaneously to several groups. This situation exists because, as Cole succinctly puts it (13), "an association (group) can always be made specific in function, while man can never be made so."

From this arise some intricate but important relations among groups and between group structure and the dynamic structure of the individual. For brevity and precision we shall formulate these relations in *seven theorems concerning the psychodynamics of groups,* the first of which will simply state the conclusion of the above few paragraphs' discussion.

Theorem 1. The Dynamic Origin of Groups: Definition of Synergy. Groups are devised for achieving individual satisfaction and exist only when they provide a means to the ends of individual ergic goals.

The interest, 'ergic investment,' or 'need satisfaction' tied up with the existence of the group must be clearly conceived as having three parts or modifications: (1) First there is the total individual energy going into the group—absorbed by its activities—which we have called the group *synergy.* (2) As Rousseau (31) pointed out, however, "the general will" is not the same as "the will of all." In Bosanquet's (2) phrase, the individual wills "cancel one another" resulting in "sovereignty." In our vectorial theory of dynamic traits certain components nullify one another, as shown by the difference between the resultant expressing the dynamic interest of the group and the non-vectorial sum of the individual interests. The unified attitude which emerges as the dynamic intention of the group *per se* we shall call the *effective synergy* or effective investment. It is the energy expressed in gaining the outside goals for which the group has come together. (3) The difference between the total synergy and the effective synergy is absorbed in internal friction and in maintaining cohesion of the group. This we may call the *intrinsic* or *group maintenance synergy.* It is a loss by internal friction and absorption. Without more space than can be given here it is not possible to analyze the rather complex transformations in group maintenance. This synergy absorbs not only selfish, antisocial and aggressive motivations, which 'cancel out,' but also the self-submissive and self assertive satisfactions of leader-follower activity and the needs of the gregarious drive. The latter is usually satisfied wholly in the group and does not pass on into effective synergy, though, like some other intrinsic synergy expenditures, it does 'effective' work in the sense of preserving group cohesion.

Though the magnitude of the intrinsic synergy normally has to be inferred from the difference of (1) and (2), it manifests itself directly as an active resistance when attempts are made to dissolve the group. Intrinsic synergy is *relatively* (not absolutely) great, in comparison with effective synergy, in a recreational club interested in sociability: effective synergy is relatively great in a political party, a scientific institute or a religious missionary society. However, in the special situation of an attempt to dissolve the group *all* the energy may be thrown back into cohesive activities, so that the last statement will no longer be true.

Theorem 2. The Vectorial Measurement of Group Synergy. To measure the total vectorial intrinsic and effective investment in a given group, *i.e.,* the total group *synergy,* we have to take account of (1) the number of people interested; (2) the intensity or strength of the satisfaction each gains; (3) the

ergic quality (vector direction (10)) of the satisfactions, and (4) the subsidiation relations of these satisfactions with respect to other groups and other purposes of the individuals concerned.

The number of people interested in a group will depend partly on the demostatic level or percolation range (6) of the idea involved, from the point of view of intelligence level, and partly on the dynamic needs it sets out to satisfy. For the present we can set aside this mere number, as a multiplier of whatever other measurements we make.

The measurement of dynamic quantity and quality has been treated systematically elsewhere (10). An attitude is a vector quantity defined as to direction (quality) by: (aF_1) (bF_2) (cF_3) . . . etc., where F_1, F_2, etc. are coordinates corresponding to basic drives (ergs) or to general sentiment structures (and therefore common social institutions) and a, b, etc. are coefficients for the particular attitude, expressing the extent of its subsidiation to each of these common and basic goals. The strength of the attitude is expressed by

$$S = aF_1 + bF_2 + cF_3 \ldots \text{ etc.},$$

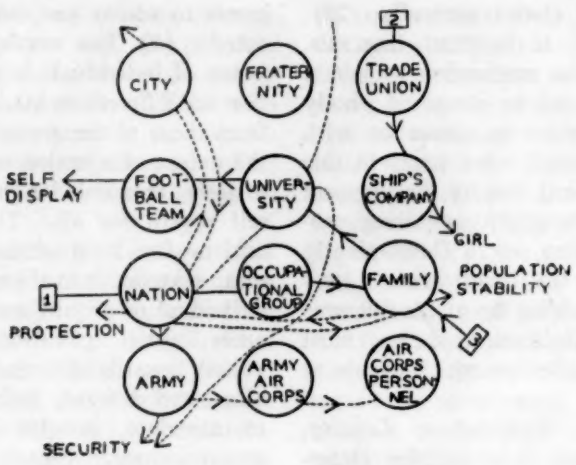
where a, b and c are as above, and F_1, F_2, etc. have satisfaction values specific for that group.

The synergy of the group is the vectorial resultant of the attitudes toward the group of all its members. Individual attitudes will vary slightly in direction and some of this deviation will be cancelled in the vectorial sum—in other words, it will be lost in the internal friction of the group. The rest will appear either as intrinsic investment, constituting the basic strength of cohesion of the group, or as effective investment, constituting the interest of the group as such.

The effective synergy of the group can finally be expressed as a vector quantity on the same coordinates as for individual attitudes.

Theorem 3. Syntal Subsidiation and the Dynamic Lattices of Groups. The effective synergy of any group goes out to purposes which are outside the group and consequently sets up habits of reacting which are subsidiary (10), with respect to some ultimate goal of the group's activity. The formation or partial support of other (mostly ancillary) groups is generally part of the subsidiation chain. For example, a nation sets up an army as a means to its goal of security or aggression (Diagram 1), and a country club may set up a committee to engineer a swimming pool as part of its synergic purpose of providing recreation. The use of group B as a tool by group A is not incompatible with the use of A by B, and, as in personal subsidiation (10), paths will form a complex, *dynamic lattice* with transflux and retroaction.

Some typical syntal subsidiations in the group and individual habits which form institutions are illustrated in the dotted lines in the following diagram. The nation supports universities because they are on its subsidiation chain to the goal of an educated democracy. It favors the family as maintaining population stability, while cities contribute to its desire for revenue and prestige. Both the family and the city, as groups, in turn have need of the nation, which satisfies their need for protection, etc. The army, in pursuit of its purposes, founds an Army Air Force and this in turn sets up a psychological Personnel Section. Although these latter accord with the will of the nation they are not directly in the subsidiary chain of the nation's purpose of self defence, but draw their origin from separate successive synergies of Army and Army Air Force. The nation, as it were, delegates synergy to the army and, as a



group, has no sense of these further purposes.

Syntal dynamic lattices are quite different and distinct from the dynamic lattice patterns of individuals, even of the particular individuals who happen to constitute chief executives of groups. (Compare dotted with continuous lines in the diagram.) This happens increasingly with the growth of specialized labor and of general currency. Nevertheless the two sets of dynamic lattices necessarily add up to the same activities and the same energy total—save for the loss between intrinsic and effective synergy.

Problems of relationship of syntal lattices and personal lattices will be different for overlapping and non-overlapping groups. Some groups, *e.g.*, nations, demand a sovereignty which will not permit members to belong to other, generally similar, groups, or to experience subjection to the purposes of other groups. Most groups, however, have overlapping personnel, and this creates dynamic problems in connection with syntal subsidiation more complex than for non-overlapping groups.

Syntal subsidiation chains will not normally end in ergic goals, as do those of individuals. The basic goals of the group concern the preservation and expansion of the group. They can be resolved into ergic goals, by analysis, but they are not individual biological goals in themselves.

Theorem 4. Personal Subsidiation of Groups in the Individual Dynamic Lattice. The subsidiation chains occurring in the dynamic lattice of the individual (10) often include groups as 'links.' For example, an emigré doctor may acquire citizenship (Group 1) in order that he may belong to his professional group (Group 2) in order that he may maintain his family (Group 3). (Chain 1 in the diagram.) Or a man may belong to a trade union (Group 2), in order to be able to join a ship's company (Group 2) in order to travel to see his girl. (Chain 2 in the diagram.) Or, to illustrate a different direction, a young man half in mind to leave the parental roof may maintain his belonging to the family in order to be sent to a university in order to get onto the university football team. (Chain 3 in the diagram.)

Naturally, the personal subsidiation chains, like the syntal chains, will not run wholly among groups ('girl' in 2), nor will they run in one direction, but will curve back on themselves. Also

like subsidiary chains generally (10), they will split at frequent intervals. For example, the motivation to join a university will not be sustained wholly by the satisfactions in connection with joining the football team (even in this day and age!) but also by the prospect of joining a fraternity, acquiring professional standing, etc. Consequently calculation of the investment in any group, by the adding up of the dynamic energies of subsidiation chains, must heed the redistribution which occurs at each link.

Theorem 5. Patterns of Loyalty, Subsidiation and Subordination Determined by Law of Effect. Like any other pattern of dynamic behavior the habits of individuals with respect to groups are formed either by insightful or by trial and error behavior, in which the most rewarded reactions become stabilized.[6] The final pattern of syntal and personal subsidiation, as well as other characteristics discussed below, is, in other words, *settled by conditions of external reality,* in that it is the best pattern discovered for approaching maximum dynamic satisfaction.

Harmful or unnecessary group reactions tend to be removed. For example, a group which does not support (by its effective synergy) its necessary ancillary groups fails; a group which tolerates parasitic subgroups fails; a group which errs in establishing correct orders of loyalty, *e.g.,* family more important than country, fails—and these failures break down the corresponding faulty group habits of the population concerned.

How far it would be profitable to deal with syntal learning by the law of effect applied to groups as a whole remains to be seen. Two transformations between syntal and personal adjustments to reality can, however, be indicated. (1) The rewards and punishments of individuals in group modification are different in kind and magnitude from those of the group. For example, the defeat of a nation may mean death to some, economic loss to others, loss of self regard for all. The 'death' of a nation—its total disintegration—may mean no more than the necessity for the individual to acquire new language and other habits. (2) Not only are individual rewards different, but they are also often delayed, indirect and harder to associate, insightfully, with their group causes. Since group learning eventually takes place through this 'secondary' learning of individuals it is not surprising that the acquisition of intelligently adapted and integrated group behavior is a slower and more painful process than similar learning with respect to the purposes of individuals.

In referring to the group behavior that has to get adapted to reality we have spoken of a hierarchy of loyalty, as well as of the previously described personal subsidiation lattice and syntal subsidiation (or 'subordination') lattice. The relation of these to one another is tentatively discussed in the next section.

That personal, individual behavior shall fit in with the requirements of syntal subsidiation and integration is assured mainly by (a) the creation of forces in the individual super ego which augment personal subsidiation trends usually of a more purely ergic level, and (b) the shifting of rewards to 'artificial' points by money and other tokens exchangeable for dynamic satisfaction. Thus when many desire the defense of a country but few volunteer for the army an army of mercenaries may be made 'loyal' to the country by rewards transferred from the money representing and created by the dynamic

[6] If any proof of this is needed, it is offered, for example, by Mowrer's neat experiments on the social behavior of the rat (28).

attachments of others to their country. Money is thus one way, the principal way, of transferring dynamic energy from one point to another. This needs to be taken into account in any attempt at dynamic calculus and offers one of the bridges from psychology to economics.

Theorem 6. Synergic Constancy in a Closed System (Fixed Population) with Overlapping Groups. By reason of the principle of constancy of individual mental energy (on which we proceed in such matters of individual dynamics as learning or neurosis) certain relations follow in the synergies of overlapping groups.

Chief among these deduced relations is that of *constancy of total synergy in overlapping groups,* providing certain conditions are maintained. Not all of the individual's energy goes into groups, so condition (1) is that the non-group investment remain constant. Condition (2) is that the group activities remain on the same level with regard to long-circuiting (or goal distance). This is necessary for two reasons. First, the individual's energy becomes expressed more readily if he is permitted less long-circuited satisfaction. Since some groups occasion less suppression and internal conflict in individuals than others, releasing more of the individual's total energy for external expression, this condition is not easily satisfied. Secondly, new groups can be linked on to a personal subsidiation chain of groups without calling on fresh energy, provided the population has not reached its toleration limit for long circuiting. For example, if a man has interest in a golf club he may be induced to join a society for the preservation of the golf course, without drawing on any new springs of interest. But this long circuiting may strike him as a bore. There are probably further conditions related to his interest in golf which will only become evident when the principle of constancy of individual mental energy is more accurately worked out. For example, we are arguing on the condition of constancy of what psychoanalysts would call 'object libido investment,' not of total energy, and certain social changes might alter the ratio of object libido to the total energy.

A corollary on this theorem is that the liquidation of any group structure will then automatically create—for psychological reasons alone and without regard for social needs and real conditions—a readjustment among the synergies of the remaining overlapping groups. They must alter their patterns to give new qualities of satisfaction—or else the residue must be taken up by some new group, equivalent in synergy, if not in intellectual content, to the lost group. For example, the dissolution of football teams might result in the activities of political parties taking on the characteristics of street fighting. A calculus of group readjustment could thus be founded on the ergic mensuration of vectors of synergy.

Theorem 7. Isomorphism of Syntality Change and Personality Change. Although the structures and functions of groups, overlapping or non-overlapping, are always ultimately shaped by the conditions of reality (as in Theorem 5 above), their form at any moment depends also on the readiness of individual minds to learn quickly or to depart quickly from that structure which is, realistically, optimum.

There will thus be a close parallelism (modified by the nature of the intrinsic relations within the groups) between syntality traits and personality traits of the population, especially those concerned with learning and dynamic stability. For example, the immediate cause of stability of group structures is the stability of the corresponding attitudes and sentiments in the individual

mind. Nothing prevents an army marching to the capital and taking charge of a nation except the higher loyalty of the patriotic sentiment, in relation to the army sentiment, in the minds of the individual soldiers. (In fact Roman legionaries abroad sometimes experienced such a growth of the sentiment toward their army fellows that unscrupulous generals could use them to overpower the Republic. The 'realistic' checks ultimately make this unrewarding (to the army and to the nation), but the immediate check is only the inherent stability (disposition rigidity) of sentiments in the individual mind.

Among the chief parallel characteristics that may be suggested are syntal conservatism (resistance to gradual change) and personal, individual *disposition rigidity;* syntal integration and personal intelligence level; syntal freedom from fashions and boom-depression cycles and individual emotional maturity; syntal democratic political conflict and personal tolerance for internal mental conflict (since group conflict in overlapping groups brings parallel personal mental conflict), and so on. Some evidence that the first of these relations can be demonstrated in data already available has been set out by the present writer elsewhere (9). In so far as this theorem operates, the advance of social psychology as an exact science is limited by the advance of personality measurement.

V. Syntality Measurement and the Dynamic Relations of Groups

The implications of the above theorems for the design of experiments directed to determining the dimensions of syntality are numerous and we have space to emphasize only a few.

In the first place, the dynamic make-up (synergy) of groups will vary far more than that of individuals, both in strength and quality. Consequently it may be profitable to sort groups into classes of more comparable kinds before starting experiments. Sorokin, Zimmerman and Galpin (33) have already proceeded with group classification essentially on this basis, into 'elementary groups' which satisfy a single need and 'cumulative groups' which hold their members by many ties. The dynamic vectorial methods suggested here simply carry this to greater quantitative meaning and exactness.

Secondly, group syntality will usually be far more narrow in dynamic content than the dynamic expression of individuals. Groups can fight, ally, acquire, fear, protect, submit, assert themselves, seek food, etc., but sexually directed behavior, for example, is rare (the rape of the Sabines, and matrimonial agencies, apart). The choice of dynamic variables for factorization therefore needs to aim at more dense representation in narrow ergic directions.

Theorem 2 above, that synergy can be expressed with regard to the ergic coordinates used for individuals leaves open the possibility that factorization may show synergy to be conveniently expressible also in terms of some relatively basic goals of groups *per se.* For example, the interests of an insurance company or a library may be as intelligible, if not as apt for dynamic calculus, when expressed in terms of service to a few basic social institutions as of basic human ergs.

This remains to be clarified by our initial experiments, as also does the question whether any laws systematically relate syntal and personal dynamic lattices and the hierarchy of typical individual loyalty to groups discussed in Theorem 5. There are concepts here which can only be tentatively defined and inter-related. Is 'loyalty' to a group determined by 'duty' (super ego

investment) or by total synergy? Is the order of loyalty the same as the order of 'social distance' (17) among people in the various groups, or, more likely, the same as the syntal subsidiation order? Can the correct order of syntal subsidiation be determined by asking "Could this group exist at all without that?" or must a situation always be arranged in which some conflict between the groups, from the standpoint of individual loyalties, exists? Is it possible that groups can only conflict in so far as their subsidiation paths are different? These questions will be dealt with elsewhere. Thirdly, because of the sensitive interdependence of groups, in regard to synergic quantity and quality, the synergy of most groups and especially the smaller, subordinate ones, will be much more liable to gross fluctuations than the total dynamic traits of the individual. So great a 'function fluctuation' makes factorization more difficult but no less worth while. It requires 'snapshot' measurement by R-technique, or the special use of P-technique. Measurement of the changing synergies of groups offers the true basis for discovery of the laws governing syntal subsidiation and other group inter-relationships.

The measurement of syntalities with respect to their dynamic make-up and subsidiation relationships offers the prospect not only of putting the description of group behavior on an altogether higher level of exactness, but of making possible a new branch of study employing a kind of 'dynamic bookkeeping' with respect to overlapping groups and the energy investments of individuals. From this 'bookkeeping' the data for a whole field of new laws regarding the psychodynamics of groups emerge. For example, many overlapping groups are approximately isomorphous (in the sense of mathematical group theory) so that their synergies would behave as approximately complementary.

Pursuit of measurable relationships in the dynamics of personalities and syntalities opens up also two extremely important developments of psychology—ethics and economics. A good deal of the morality of individual behavior is admittedly weighed in terms of the effects of the latter on the welfare of groups (whether or not we accept the whole theoretical basis of Mill and Bentham). Indeed, the calculations of discrepancy between constituent individual attitudes and group synergies become in effect an estimation of individual morality—if the general position of Mill and Evolutionary Ethics (7) is accepted.

Similarly the key to the whole relationship of psychology and economics lies in these calculations. For groups to achieve their objects it is necessary to transmit interest energy from place to place. Transmission along a subsidiation chain takes place for groups and for individuals principally by tokens (money) but the process is perhaps clearer for groups. As frequently mentioned in sociology the most consistent characteristics of existing primary groups (other than behaving as a totality) are (1) order and (2) taxation. Synergy expresses itself most frequently through the latter. Members of a group tax themselves, proportionally to the strength of their interest in the existence of the group. This money is at once a measure of the strength of their individual attitudes and of the group synergy; for, generally it is not by work on the part of the members themselves that the group synergy expresses itself, but by the work of others paid for by the taxation of the group. That cost could be used as a measure of desire, thus uniting economic and psychodynamic measures, is not a new idea but an old one which was found wanting (8,

10). Only when it is considered in the total setting of group dynamics, apparently, can it be made workable.

These theoretical vistas in group dynamics can be glanced along but not followed, here. For the dynamic traits of groups are only one aspect of the total syntality and have been examined more analytically only because it appears that syntality differs from personality more in dynamic structure than in ability or temperament traits. However, the upshot of our examination is that dynamic characteristics, especially if they are sampled with proper regard to the nature of group synergies, can profitably be included in the same factorization with measures of group temperament and group abilities.

VI. SUMMARY

(1) Social psychological research can advantageously be centered on the behavior of groups as organic, functionally integrated entities. Group syntality has more resemblances than differences with regard to individual personality, suggesting profitable transfer of research methods from one to the other.

(2) Effective research on the development, abnormalities and inter-relations of groups can proceed only on a foundation of syntality measurement. The dimensions of syntality can be found by factor analysis.

(3) Factor analysis must rest on an even sampling of a wide range of group characteristics. The characteristics of groups have to be sought at three levels: (1) Syntality—the behavior of the group; (2) Structure—the relations of individuals in the group; (3) Population personality traits—the individual characteristics averaged.

(4) Groups differ from individuals most radically in their dynamic make-up or synergy, especially because of the structural possibilities of overlapping groups. This does not invalidate the factorization of group characteristics but it introduces complications requiring special attention to the design of investigation.

(5) The dynamic relationships which have to be heeded in the design of experiments to investigate group syntalities, and which require investigation in their own right as prime determiners of the behavior of groups, have been expressed in seven theorems. These theorems may be briefly labelled: (1) Dynamic origin of groups; (2) Vectorial measurement of synergy; (3) Subsidiation in the syntal lattice; (4) Subsidiation in the personal lattice; (5) Hierarchies of loyalty from the law of effect; (6) Synergic constancy in a system of overlapping groups; and (7) Isomorphism of syntality change and personality change.

BIBLIOGRAPHY

1. BENEDICT, R. *Patterns of culture.* New York: Houghton, Mifflin, 1934.
2. BOSANQUET, B. *The philosophical theory of the state.* London: Macmillan, 1910.
3. BROGAN, D. W. *The American character.* New York: Knopf, 1945.
4. BUELL, R. L. *International relations.* New York: Henry Holt, 1929.
5. BURT, C. *Factors of the mind.* London: University of London Press, 1940.
6. CATTELL, R. B. Some changes in social life in a community with a falling intelligence quotient. *Brit. J. Psychol.*, 1938, **28**, 430–450.
7. ——. *Psychology and the religious quest.* New York: Nelson, 1938.
8. ——. *The description and measurement of personality.* New York: World Book Co., 1946.
9. ——. The riddle of perseveration. II. Solution in terms of personality structure. *J. Person.*, 1946, **14**, 239–268.
10. ——. The ergic theory of attitude and sentiment measurement. *Educ. & Psychol. Measurement*, 1947, **7**, 221–246.
11. ——. The syntality of national culture patterns: I. R-technique on 63 nations. (Publication to be announced.)
12. ——, & WISPE, L. The dimensions of syntality in structured groups of six persons. (Publication to be announced.)

13. COLE, G. D. H., & COLE, M. *A guide to modern politics.* London: Gollancz, 1934.
14. COLE, G. D. H. *Social theory.* New York: Frederick Stokes, 1920.
15. GILLIN, J. L., & GILLIN, J. P. *Introduction to sociology.* New York: Macmillan, 1946.
16. GUMPLOWICZ, L. *Outlines of sociology* (trans. by F. H. Moore). Philadelphia: American Academy of Political and Social Science, 1899.
17. GURNEE, H., & BAKER, E. The social distances of some common social relationships. *J. abnorm. & soc. Psychol.*, 1938, 33, 265–269.
18. GURWITCH, A. *The sociology of law.* New York: Philosophical Library, 1942.
19. HART, H. N. *Science of social relations.* New York: Holt, 1931.
20. HAYES, E. C. *Principles of sociology.* New York: D. Appleton Co., 1923.
21. HOBHOUSE, L. T. *The metaphysical theory of the state.* New York: Macmillan, 1918.
22. JENNINGS, H. Structure of leadership—development and sphere of interest. *Sociometry*, 1938, 1, 99–143.
23. KEYSERLING, H. *Das Spektrum Europas.* Berlin: Deutsche Verlags-Anstalt, 1928.
24. MANNHEIM, K. *Man and society.* New York: Harcourt, Brace, 1940.
25. MCDOUGALL, W. *The group mind.* New York: Putnam, 1920.
26. MEAD, M. *And keep your powder dry.* New York: Morrow, 1943.
27. MORENO, J. L., & JENNINGS, H. H. Statistics of social configurations. *Sociometry*, 1938, 1, 342–374.
28. MOWRER, O. H. *An experimentally produced "social problem."* (Film, obtainable Harvard Educ. Dept.), 1939.
29. MÜNSTERBERG, H. *The Americqus.* Garden City: Doubleday, 1914.
30. ROSS, E. A. *Foundations of sociology.* New York: Macmillan, 1905.
31. ROUSSEAU, J. J. *Du contrat social.* Amsterdam: Rey, 1762.
32. SIEGFRIED, A. *France, a study in nationality.* London: H. Milford, Oxford University Press, 1930.
33. SOROKIN, R. A., ZIMMERMAN, C. C., & GALPIN, C. J. *A systematic source book in rural sociology.* Minneapolis: Univ. of Minnesota Press, 1930.
34. THORNDIKE, E. L. *Your city.* New York: Harcourt, Brace, 1939.
35. THURSTONE, L. L. *The vectors of the mind.* Chicago: University of Chicago Press, 1935.
36. VON WIESE, L. *Systematic sociology* (trans. by H. Becker). New York: John Wiley & Sons, 1932.
37. WARD, L. F. *Pure sociology.* New York: Macmillan, 1903.

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